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# Dynamic capabilities as enablers of business model innovation

Cases from Finnish start-up companies

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**ABSTRACT:**

**Purpose -** The increasingly dynamic business environment in current economies presents more challenges to companies than ever. Frequent environmental shifts in competition, technology, social structures, and regulations can determine the level of competitive advantage of many, especially small companies. As competition increases, companies are forced to re-evaluate their business models. The aim of this thesis is to gain an understanding of by what means start-up companies react to change and how it reflects on business model innovation.

**Framework –** The theoretical background of this thesis is examined through two different research concepts. First, dynamic capability literature is examined, and the theoretical framework of microfoundations is applied. Furthermore, business model innovation literature is explored to be able to address the research topic comprehensively. Elements from both areas of literature are combined, which provides the foundation for the empirical study of this thesis.

**Methodology -** The empirical study is carried out as a multiple case study. Four start-up companies are selected from the Finnish technology industry, and the data is collected through semi-structured interviews with founders and team members. The data is analyzed using within-case and cross-case analysis methods to find similarities in the cases.

**Findings -** The dynamic capability practices enabling business model innovation in start-up companies are found to be relatively similar. The findings indicate that continuous internal communication is central, as well as involving key partners and customers throughout the processes of sensing, seizing, and reconfiguring. Start-up companies' view on business model innovation is found to be heavily focused on product or service innovation, and other elements of the business model receive significantly less attention.

**Contribution –** This study increases understanding of the relationship between dynamic capabilities and business model innovation literature and expands it by exploring concrete practices companies apply to cope with constant change. Furthermore, this thesis provides an empirical model that can be applied when observing dynamic capability practices related to business model innovation. In addition, this study emphasizes the significance of networking and viewing business through long-term goals.

**KEY WORDS:** dynamic capabilities; microfoundations; business models; business model innovation; start-up companies

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**TIIVISTELMÄ:**

Nykyisten liiketoimintaympäristöjen lisääntynyt dynaamisuus luo enenevissä määrin haasteita yrityksille. Toistuvat muutokset kilpailussa, teknologiassa, sosiaalisissa rakenteissa ja säännöissä voivat määrittää monien, erityisesti pienten yritysten kilpailuedun. Kilpailun lisääntyessä yritykset joutuvat arvioimaan liiketoimintamallejaan uudelleen. Tämän tutkielman tarkoitus on ymmärtää, millä tavoin start-up -yritykset reagoivat muutoksiin ja miten tämä heijastuu liiketoimintamalli-innovaatioon.

Tutkimuksen teoreettista taustaa tarkastellaan kahdesta eri tutkimusnäkökulmasta. Ensin tarkastellaan dynaamisia kyvykkyyksiä käsittelevää kirjallisuutta, jonka jälkeen mikropohjia koskeva teoreettinen viitekehyskehys esitellään tarkemmin. Tämän jälkeen tarkastelu siirtyy liiketoimintamallien innovaatiokirjallisuuteen, jotta tutkimusaiheesta saadaan kattava kuva. Kyseisiä teorioita yhdistelemällä luodaan perusta tämän tutkielman empiiriselle tutkimukselle.

Empiirinen tutkimus on toteutettu monitapaustutkimuksena neljän suomalaisen teknologia-alan start-up -yrityksen kanssa. Tiedonkeruuseen käytetään osittain strukturoituja haastatteluita perustajien sekä tiimin jäsenten kanssa. Tiedot analysoidaan tapaus- ja ristikkäisanalyysimenetelmillä samankaltaisuuksien löytämiseksi.

Tutkimuksessa todetaan, että dynaamiset toimintakäytännöt, jotka mahdollistavat liiketoimintamalli-innovaation start-up yrityksissä, ovat melko samanlaisia. Tulokset osoittavat, että jatkuva sisäinen viestintä sekä keskeisten sidosryhmien saattaminen osalliseksi aistimisen, tarttumisen ja uudelleenmäärittelyn prosesseihin on tärkeää. Start-up yritysten havaitaan keskittyvän voimakkaasti tuote- tai palveluinnovaatioihin, ja muihin liiketoimintamallin osiin kiinnitetään huomattavasti vähemmän huomiota.

Tämä tutkimus lisää ymmärrystä dynaamisten kyvykkyyksien ja liiketoimintamallien innovaatiokirjallisuuden välisestä suhteesta. Tutkielma laajentaa kirjallisuutta tutkimalla myös konkreettisia käytäntöjä, joita yritykset soveltavat selviytyäkseen jatkuvasta muutoksesta. Lisäksi tämä tutkielma tarjoaa empiirisen mallin, jota voidaan käyttää dynaamisten käytäntöjen havainnoimiseen. Tämä tutkimus korostaa verkostoitumisen sekä liiketoiminnan pitkän aikavälin tarkastelun merkitystä.

**AVAINSANAT:** dynamic capabilities; microfoundations; business models; business model innovation; start-up companies

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# 1 Introduction

Small businesses and entrepreneurship have received an increasing amount of attention amongst scholars in the past decade. This is expected as entrepreneurship has had a major influence on worldwide economic development (Gedeon, 2017). Recently, start-up entrepreneurship has also gained some foothold in the literature as there are many great start-up success stories. However, in most cases start-ups tend to more likely fail than succeed (Patel, 2015). The increasingly dynamic and high-velocity business environment in current economies present more challenges to companies than ever (Bourgeois & Eisenhardt, 1988; Barreto, 2010). Frequent environmental shifts in competition, technology, social structures, and regulations can determine the level of competitive advantage (Barreto, 2010) and, thus, the fate of many, especially small companies.

## 1.1 Background and motivation for the study

The definition of a start-up company varies in literature (Paternoster, Giardino, Unterkalmsteiner, Gorschek & Abrahamsson, 2014). Generally start-ups can be described as newly established ventures (Blank, 2013) that are “designed to create new products and services under conditions of extreme uncertainty” (Ries, 2011: 8). However, in contrast to conventional small companies, start-ups are profoundly future-oriented and aim to seek high scalability and growth instead of profits (Blank, 2007; 2013; El Hanchi & Kerzazi, 2020). This focus on growth and capability to detect and exploit opportunities are the differentiating factors between start-ups and small companies (El Hanchi & Kerzazi, 2020).

Similarly to small companies, start-ups operate under a high level of uncertainty and with limited resources, suffering from liabilities of smallness and newness (Freeman & Engel, 2007; El Hanchi & Kerzazi, 2020). Start-up success is highly determined by innovation capabilities, learning, and networking (Pellegrino, Piva & Vivarelli, 2012; El Hanchi & Kerzazi, 2020). Seeking for funding is also a central aspect in a start-up’s life-cycle and the start-up funding scene has evolved to consist of several stages depending of the phase

and size of the company (Nofsinger & Wang, 2011). Funding is an enabler of seeking new ways for growth and exploiting and maximizing the resources the start-up has. Regardless that seeking funding is undoubtedly a critical strategic action, this thesis focuses on other means of achieving growth.

To achieve rapid growth, start-ups require a great set of different capabilities (Zahra, Sapienza, & Davidsson, 2006). Amongst others, they must be able to constantly learn and recognize new opportunities and turn them into functioning and profitable business models and implement them (Shane & Venkataraman, 2000; Zahra et al., 2006; Alvarez & Barney, 2013; Foss & Klein, 2017.) Research indicates that the average extent of time for which companies can retain competitive advantage has declined over the years (Wiggins & Ruefli, 2005) and in many industries success is determined by companies' abilities to continuously bring new innovations to the market (Jantunen, Ellonen & Johansson, 2012). Changes in the business environment can make existing capabilities and customer offerings obsolete meanwhile presenting new opportunities. To manage seizing these opportunities and adapt to changes companies must develop their resources and capabilities. (Jantunen et al., 2012.) Similarly to external changes, learning can present new opportunities (Pellegrino et al., 2012; Eriksson, 2014). Thus, start-ups should be aware of these aspects as they usually operate in highly dynamic and uncertain environments (Ries, 2011: 8). Teece (2010) reminds that it is rarely the case that the initial idea and business model of a start-up lead straight to success without modifications along the way. Thus, learning and making appropriate changes while facilitating innovation become crucial factors in regards of start-up growth.

## 1.2 Research gap

Business model innovation has been noted to create similar or greater returns than solely product or process innovation (Chesbrough, 2007) which is why it can be considered as a key strategic factor to focus on in companies. To successfully manage the business model innovation process, the approach of dynamic capabilities should be har-

nessed (Teece 2010; Mousavi, Bossink & van Vliet, 2018). Dynamic capabilities aid in anticipating and adapting to environmental changes through pinpointing crucial factors and practices in the innovation process. Due to dynamic capabilities, companies can adjust to shifts in the business environment and enhance competitive advantage. (Teece, 2007.) Therefore, these competencies should be actively developed in order to design a superior business model.

There is a considerable amount of articles published on the concepts of business model innovation and dynamic capabilities, however scholars note that the literature is scattered and there are no unanimous definitions on either of the concepts (see e.g. Zott, Amit & Massa, 2011; Barreto, 2010). Even though in varying extent, the effects of business model innovation and dynamic capabilities are recognized and it is well understood that both concepts determine competitive advantage (Johnson, Christensen & Kagermann, 2008; Teece, Pisano & Shuen, 1997). It has also been noted that there are significant differences whether these concepts are acknowledged and applied in companies (Bucherer, Eisert, Grassmann, 2012; Chesbrough, 2010). This validates the need for additional empirical research to be able to present practical more managerial implications.

Business models and dynamic capabilities are interdependent and companies with solid dynamic capabilities are more likely to obtain successful business model designs. As business models influence organizational design and determine feasibility of strategies, they also influence dynamic capabilities. (Teece, 2018.) Regardless of the high interdependency of business model innovation and dynamic capabilities, only a few articles combine the two topics together (see e.g. Teece, 2018). The need for further empirical research on this relationship is noted by Teece (2018) as he arguments that improved comprehension of business model innovation, its application, and transformation would clarify critical features of dynamic capabilities. This is also echoed by Eriksson (2014) who suggests that the processes of dynamic capabilities should be compared and contrasted to gain understanding how dynamic capabilities operate. She continues by underlining that research regarding these processes would be especially beneficial conducted from an

entrepreneurial and small business point of view. This thesis continues this idea and aims to examine business model innovation and dynamic capabilities as enablers of start-up growth.

When observing the contexts from a start-up lens, the literature becomes even more scant as most studies heavily focus on large, more established companies with an existing resource base, organizational capabilities, and processes related to innovation (Zahra et al., 2006). Start-up success is highly determined by the capability to find and take advantage of opportunities, and construct new business models. (El Hanchi & Kerzazi, 2020.) The contexts of small businesses and entrepreneurship are more common in literature but start-ups are not necessarily specified as a focus. Thus, there is a clear call for empirical research that combines business model innovation and dynamic capabilities specifically within a start-up context. It is unclear whether these theories can be applied to start-ups per se or if there are differing underlying processes when compared to other types of companies.

Eriksson (2014) notes that the activities related to dynamic capability processes are often studied on an organizational level and argues that more research is required on how employees influence the development of dynamic capabilities through their activities. Eriksson (2014: 10) further proposes that “there is a need to examine the antecedents more holistically” referring to the underlying processes or ‘microfoundations’ of dynamic capabilities. Companies operate in complex environments where the combined effects of these antecedents can have enabling or constraining effects which is why they must be further studied (Eriksson, 2014). Thus, it is vital to focus on the underlying activities that enable the development and application of dynamic capabilities and to observe how these affect the innovation of business models. Teece (2007) notes that dynamic capabilities and transformation in general are entrepreneurial in nature which is why a start-up setting is valid to study these activities as these start-up companies are highly entrepreneurial and roles are often more agile. Figure 1 illustrates the research gap.

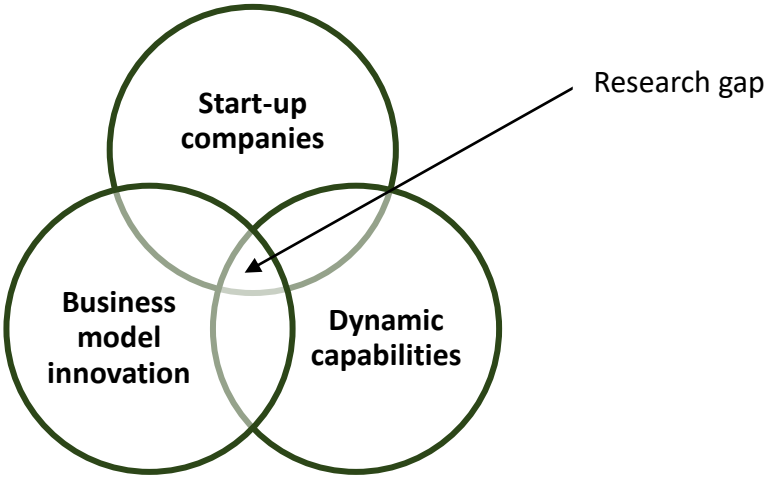


**Figure 1. The main research areas of the study and the research gap.**

## 1.3 Research question and objectives

This thesis intends to provide a wider comprehension of the connection between dynamic capabilities and business model innovation. The study aims to demonstrate that these concepts are not as separate as current literature presents them but they indeed are merged together and their processes are highly complementary. Consequently, as this issue is addressed, the main purpose of the thesis is to discover distinct dynamic capability processes that enable and contribute to the innovation of business models. These concepts are further studied through a start-up lens to find out whether the processes are similar as presented in existing studies. Therefore the following research question is formed:

*What kinds of dynamic capability practices enable business model innovation in Finnish start-up companies?*

In the pursuit of providing an answer to the research question and increase understanding of the research concepts, the following research objectives are set:

1. Define and describe dynamic capabilities and their processes.

2. Describe business model innovation literature and establish a link between it and dynamic capability literature.
3. Find out the most critical dynamic capability practices regarding business model innovation using four different Finnish start-up companies.
4. Find similarities in the cases.

By addressing these research objectives and presenting an answer to the research question, this thesis provides theoretical contributions to existing literature by combining the literatures on business model innovation and dynamic capabilities within a start-up framework. This thesis provides an empirical model through which the critical dynamic capability processes of a start-up company can be observed. Meanwhile, it also pinpoints each of these activities' relevance to business model innovation. Further, this model can be applied as a managerial tool to assess dynamic capability processes to enable adaptability to changes and innovation.

## 1.4 Structure of the thesis

This thesis is constructed of five sections. Following this introduction, the thesis continues with a comprehensive literature review. The literature review begins by defining and characterizing dynamic capabilities after which their antecedents, processes and outcomes are examined. The processes related to dynamic capabilities are observed through Teece's (2007) microfoundations framework. After gaining a holistic outlook of dynamic capabilities, the topic of business model innovation is introduced. The definitions of the topic are discussed and different tools are presented. The literature review closes with a synthesis of both topics and presents a model to examine critical dynamic capability processes related to business model innovation. This model provides the fundamentals for the empirical study.

Following the literature review, the third section provides insight into the methodology of the study. In this chapter, the research strategy and method will be discussed. Addi-

tionally, the case selection process and the analysis methods are explained. Critical discussion on the validity and reliability can also be found in this section. Consequently, the fourth section illustrates the findings of the empirical study. Within-case and cross-case analysis are used to explain the findings. The fifth chapter provides the discussions including theoretical and managerial contributions of this thesis and also suggestions for future research. The construct of this thesis is illustrated in Figure 2.

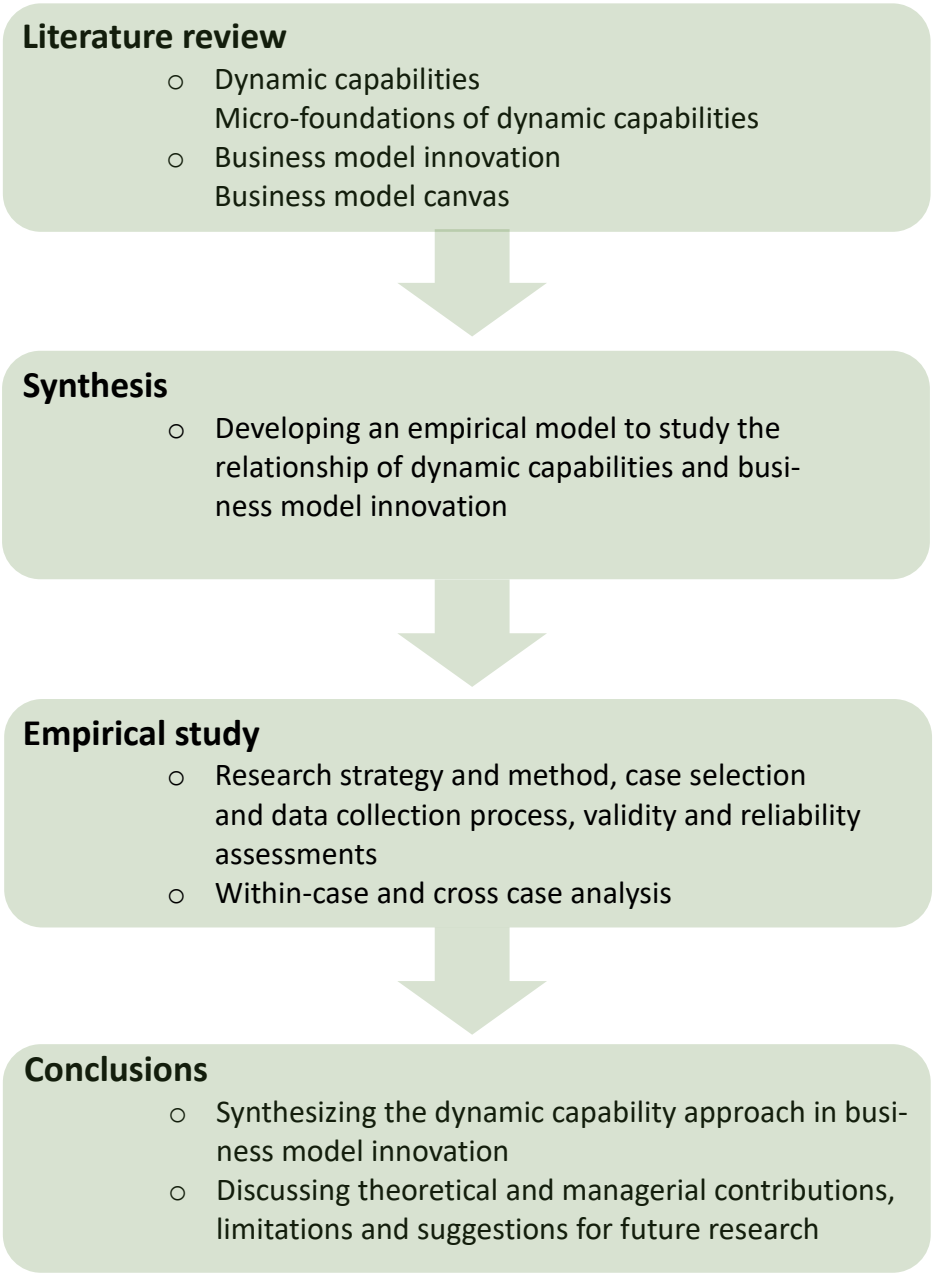


**Figure 2. The structure of the thesis.**

# 2 Literature review

To achieve a comprehensive understanding of the context of start-ups and their activities in the pursuit of growth, previous literature must be examined. First, the research on dynamic capabilities is explored and reviewed. The literature review briefly introduces the different conceptualizations of dynamic capabilities to provide understanding on how fragmented the literature is. The review continues to explain the antecedents, processes and outcomes of dynamic capabilities to gain understanding of the whole underlying mechanisms of the topic. Following, the literature review introduces the concept of business model innovation and how this theory applies to start-up companies. Consequently, the literature review closes with a synthesis on both literatures and introduces a model for empirical research to identify critical processes that enable renewal in start-ups. This comprehensive synthesis explains how dynamic capabilities influence business model innovation**.**

## 2.1 Dynamic capabilities

Capabilities can be characterized as a company's capacity to deploy resources using organizational processes to achieve a craved outcome (Amit & Schoemaker, 1993:35). Capabilities have been further divided into sub-categories, such as operational capabilities and dynamic capabilities (Helfat & Winter, 2011; Teece, 2018). Operational capabilities reflect the processes and practices conducted at a practice level to achieve efficiency and dynamic capabilities are most commonly described as companies' abilities to integrate, build, and reconfigure internal and external competences to cope with fast changing environments (Teece et al., 1997). Thus, a distinctive element of dynamic capabilities is that they go beyond organizational competences and involve managerial processes (Teece, 1986; 2006).

The aim of the dynamic capability approach is to interpret the development of companies competitive advantage over time (Teece & Pisano, 1994). The increasing body of literature on dynamic capabilities provides consecutive and distinct definitions on the

theme (Barreto, 2010). The research on dynamic capabilities has been heavily focused on searching for definitions rather that engaging in deeper research. The fragmented conceptualization of dynamic capabilities has characterized the definition of the term to this day and, thus, it has remained rather divided. (Barreto, 2010; Zahra et al., 2006.) According Barreto (2010) the main challenge is to form a concept on an ambiguous context that simultaneously avoids being too vague while also avoiding excessive specification. The main definitions of dynamic capabilities are selectively presented in Table 1. Overall, the literature on dynamic capabilities has experienced rapid growth and has become a highly diverse field of research. (Barreto, 2010; Eriksson, 2014.)

The research on dynamic capabilities is influenced by various literature streams. Influence has been drawn, for example, from long-established research such as Schumpeter's theory of creative destruction, Cyert and March's (1963) behavioral aspects of the firm, and Nelson and Winter's (1982) evolutionary theory of economic change. (Eriksson, 2014). Respectively, as Barreto (2010) notes, dynamic capabilities literature has influenced not only the research on strategic management but also, e.g. entrepreneurship (e.g., Arthurs & Busenitz, 2006), marketing (e.g., Menguc & Auh, 2006) and human resources management (e.g., Thompson, 2007).

Due to the influence of numerous literature streams and the novelty of the field, the conceptualization of dynamic capabilities is rather wide. However, Barreto (2010) notes that the different concepts of dynamic capabilities can be categorized. He proposes that the conceptualizations can vary in terms of whether the capability's specific role, purpose, or nature is defined, whether a relevant context is determined, or if there are assumptions heterogeneity of the dynamic capability. The nature of dynamic capabilities has been defined in literature as "abilities (or capacities) but also as processes or routines" (Barreto, 2010: 260). Barreto (2010) finds that due to different approaches, there are opposing views in research as, for example, some articles focus simply on the existence of the dynamic capabilities, meanwhile other research seeks to uncover the development and maintenance of these capabilities.

Teece et al. (1997) conducted a study that can be regarded as perhaps the most influential and initial research on the topic of dynamic capabilities. They propose that dynamic capabilities can be considered as an expansion of the resource based view (RBV). The RBV aims to explain the different circumstances companies operate within using their resource and capability mix. According to the RBV, companies are diverse because they possess different sets of resources which they then apply varyingly to their processes leading to different strategies and, thus, outcomes. (Barney, 1986; 1991.) These sets of resources can provide sustainable competitive edge considering they are valuable, rare, costly to imitate and non-substitutable (Barney, 1991). The RBV framework is widely used to identify key resources to be exploited for further sustainable competitive advantage. In this context, resources can be considered as *"stocks of available factors that are owned or controlled by the firm"*, meanwhile capabilities can be seen as a company's *"capacity to deploy resources, usually in combination, using organizational processes, to effect a desired end"* (Amit & Schoemaker, 1993: 35). The RBV can considered to have a somewhat static nature and, thus, it cannot explain competitive advantage in a changing environment. Hence, Teece et al. (1997) suggest the dynamic capabilities framework to fill this gap. They propose that dynamic capabilities portray a company's capacity to obtain new ways of gaining competitive advantage (Teece et al., 1997).

According to Eriksson's (2014) comprehensive literature review on the topic, many researchers see dynamic capabilities as higher-order capabilities that affect operational capabilities (see e.g. Winter, 2003; Zahra, 2006; Teece, 2007; 2018). Operational capabilities, or 'ordinary' capabilities are often a blend of more straightforward capabilities and routines related to them. Therefore, according to this conceptualization, dynamic capabilities can be seen as purposeful modifiers and extenders of not only resources but also other capabilities to cope with environmental changes (Winter, 2003; Teece, 2007). Especially earlier research tends to focus on changes in resources, capabilities, operating routines as a specific role of dynamic capabilities. More recent research regards decision-making capabilities or the ability to discover opportunities and threats as also vital roles (Eriksson, 2014).

There is debate around the question of the environmental factors of dynamic capabilities. Some research links dynamic capabilities precisely to swiftly changing environments however, there are also advocates of less dynamic environments to be relevant in this concept as well. Thus, the extent of what is “dynamic” still remains unclear as well as what contexts are relevant in terms of dynamic capabilities. (Barreto, 2010).

According to Helfat, Finkelstein, Mitchell, Peteraf, Singh, Teece, and Winter (2007) there are two main indicators by which dynamic capabilities can be assessed, these are ‘technical’ fitness and ‘evolutionary’ fitness. Evolutionary fitness refers to the external environment and it determines how well the capability enables a company to create profits, or in other regards, to succeed. Technical fitness refers to capabilities, such as how effectively a capability can perform its function, regardless of evolutionary fitness. Teece (2007) regards technical fitness more as ordinary capabilities but acknowledges that dynamic capabilities can enhance evolutionary fitness through helping to shape the environment. In addition, he notes that dynamic capabilities that involve shaping of the environment are also partially entrepreneurial capabilities. Therefore, entrepreneurial fitness can be added as a third main indicator for dynamic capability assessment. Teece (2007) continues by concluding that the concept of dynamic capabilities ties together the academic work on strategy and innovation and provides a framework that emphasizes the most decisive capabilities that are essential to retain evolutionary and entrepreneurial fitness.

In some research, the nature of dynamic capabilities are conceptualized as processes or a composition of a variety of processes instead of solely being abilities. In this conceptualization the dynamic capability processes are seen to be both organizational and managerial. Through these processes the company can identify the need for change and, further, manage and accomplish it. (Helfat et al., 2007.) According to this approach, dynamic capabilities are functions within learning processes and can include aspects, such as accumulation, articulation, and codification of knowledge and experiences. However, there is debate on heterogeneity, i.e. whether dynamic capabilities are identifiable distinct processes that coordinate resources into favorable outcomes or whether they are

solely processes to acquire and deploy resources, such as product development (Eisenhardt & Martin, 2000; Barreto, 2010). According to the former approach, dynamic capabilities are difficult to imitate processes that can be particular to one company. In the latter approach, dynamic capabilities are seen as a sum of how a company mixes its resources and capabilities. This ability to create unique combinations is distinctive as the latter approach considers resources and capabilities to be otherwise commonalities amongst companies. (Barreto, 2010.) Some of the various definitions of dynamic capabilities are presented in Table 1.

**Table 1. Definitions and Conceptualizations of Dynamic Capabilities.**

| Study | Definition |
|---|---|
| Teece et al. (1997: 516) | "The firm's ability to integrate, build, and reconfigure internal and external competences to address rapidly changing environments." |
| Eisenhardt & Martin (2000: 3) | "The firm's processes that use resources—specifically the processes to integrate, reconfigure, gain, and release resources—to match and even create market change. Dynamic capabilities thus are the organizational and strategic routines by which firms achieve new resource configurations as markets emerge, collide, split, evolve, and die." |
| Winter (2003: 991) | "Those (capabilities) that operate to extend, modify, or create ordinary capabilities." |
| Helfat et al., (2007: 4) | "The capacity of an organization to purposefully create, extend, or modify its resource base." |
| Teece (2007: 1319) | "… The capacity (1) to sense and shape opportunities and threats, (2) to seize opportunities, and (3) to maintain competitiveness through enhancing, combining, protecting, and, when necessary, reconfiguring the business enterprise's intangible and tangible assets." |
| Barreto (2010: 271) | "A dynamic capability is the firm's potential to systematically solve problems, formed by its propensity to sense opportunities and threats, to make timely and market-oriented decisions, and to change its resource base." |

As a conclusion, it can be noted that dynamic capabilities are multi-faceted. Rosenbloom (2000) demonstrates this by proposing that companies with great tendency to change their resource configuration might have inabilities to form timely decisions. In this case the full potential benefits of change remain unrealized as the company lacks critical dynamic capabilities. According to Barreto (2010), dynamic capabilities are constructed by four main dimensions which include the ability to alter the resource base, discover opportunities and threats, and to make market-oriented decisions on time. Similar findings have been made by Teece (2007) suggesting that dynamic capabilities are constructed of microfoundations. As dynamic capabilities are a rather abstract and complex concept, they are often observed through some of their elements, such as outcomes, for example (Zahra et al., 2006; Eriksson, 2014). Therefore, moving on from the conceptualizations, the literature review takes a closer look on the antecedents, processes and outcomes of dynamic capabilities in the following sections.

### 2.1.1 Antecedents of dynamic capabilities

Multiple elements influence the emergence of dynamic capabilities. These elements are circumstances or qualities a company possesses or a combination of them and their effects can be positive or negative in regards of dynamic capability development. (Teece, 2007; Ambrosini & Bowman, 2009.) Eriksson (2014) finds that anteceding elements can emerge both within and outside a company.

*Internal* antecedents appear in various forms and according to Eriksson (2014) they can be divided into two categories: social and structural. Social antecedents can manifest as organizational or individual orientations. In practice, these orientations represent, e.g. how an organization regards its market or the level of entrepreneurialism (see, e.g. Jantunen, Puumalainen & Saarenketo, 2005; Magnusson & Boccardelli, 2006). Organizational capabilities can be also categorized as social antecedents as they play a vital role in determining organizational change. Regardless of company size, organizational capabilities, such as flexibility and collaboration have been especially noted to have a great impact on the implementation of change. (Oxtoby, McGuiness & Morgan, 2002;

Blomqvist, Hara, Koivuniemi, & Äijö, 2004.) Project capabilities are another central social antecedent as an increasing amount of companies operate project based. Project capabilities represent the ability to distribute information gathered on the project level to the whole organization, generating organizational learning and, thus, potential emergence of dynamic capabilities. (Söderlund & Tell, 2009.)

As mentioned earlier, scholars such as Eisenhardt & Martin (2000) consider dynamic capabilities as routines. Organizational routines or practices can also be considered as social and structural antecedents of dynamic capabilities. For example, Wooten and Crane (2004) note that organizational practices increase employee devotion. However, there is controversy in the literature regarding routines as positive antecedents of dynamic capabilities since some scholars have found routines to make organizations more rigid and, thus, less prone to change and innovation (Vassolo & Anand, 2007; Benner, 2009).

Organizational structure is the most evident structural antecedent of dynamic capabilities as it dictates not only organizational routines but also the level of flexibility (Jones & Kraft, 2004; Eriksson, 2014). A company's resource mix is also a vital structural antecedent since resources are required to support the organization's orientations and to accurately react to opportunities and threats (Verona & Ravasi, 2003). According to some studies (see e.g. Andren, Magnusson & Sjolander, 2003; Miyake & Nakano, 2007) the amount of resources have an impact on business model development. They found that the less resources the company has, the more likely they are to develop a profitable business model as abundant resources generate more opportunities and increase the risk of making disadvantageous strategic choices. Related to the resource mix, employee capabilities, especially managerial capabilities also play a key role in the emerging of dynamic capabilities (Zhang, 2007).

*External* antecedents represent environmental and inter-organizational relationship factors that influence the emergence of dynamic capabilities. As the world has turned more globalized, the importance of relationships and networks has increased. (Eriksson, 2014.)

In addition to inter-organizational learning, networks can provide complementary resources and access to assets or help with opportunity recognition (Macpherson, Jones & Zhang, 2004). Døving and Gooderham (2008) note that this is particularly vital for small companies as their internal assets are limited. Environmental antecedents in turn, represent the level of instability in the markets and institutional or technological environment. When changes occur in these dimensions, there is an increased need for dynamic capabilities. Similarly, if the environment is profoundly uncertain or rigid, the rapid development of dynamic capabilities is likely to take place. (Eriksson, 2014.) The illustrated elements in Figure 3 influence the development of dynamic capabilities. It is vital to acknowledge that while these elements are categorized as external and internal, the effects stem also from individual to environmental levels.

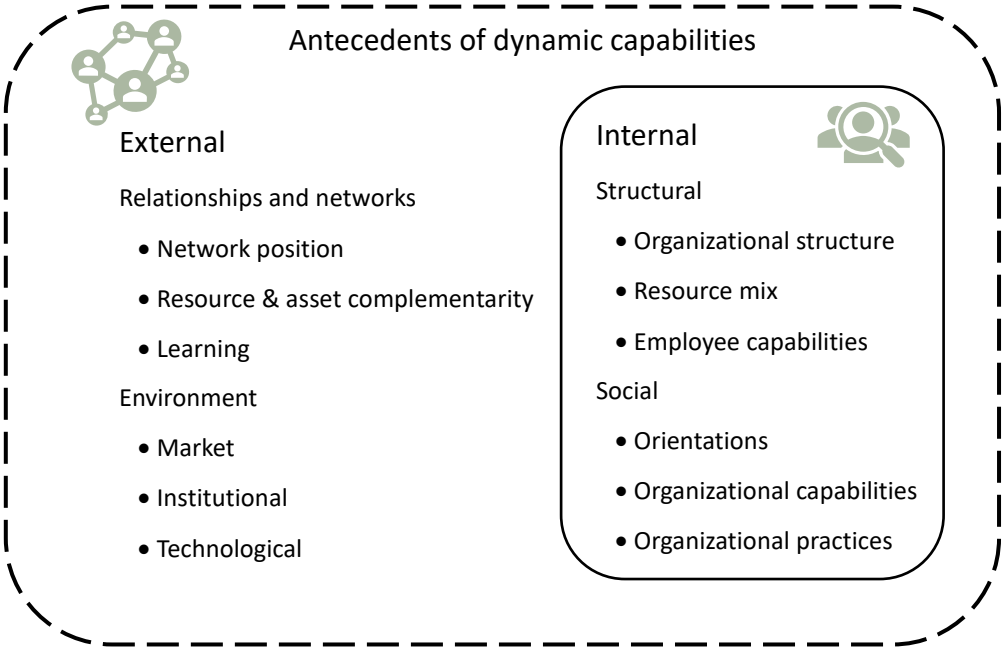


**Figure 3. Antecedents of dynamic capabilities.**

### 2.1.2 Outcomes of dynamic capabilities

The outcomes of dynamic capabilities have mainly been researched from the perspective of economic performance (Eriksson, 2014; Barreto, 2010). Regardless that it still remains unclear how dynamic capabilities influence performance, various studies have

found a direct link between them (e.g. Kor & Mahoney, 2005; Wu, 2007; Zhang, 2007; Zhu & Kraemer, 2002). Studies have found moderating and mediating factors between the relationship of dynamic capabilities and performance, such as technological turbulence (Song, Droge, Hanvanich & Calantone, 2005), strategic orientation (Slater, Olson, & Hult, 2006), and network resources (Yiu & Lau, 2008). In addition to the economic view, performance can be also considered as, e.g. innovative, technological, and international performance. (Eriksson, 2014.)

Other studies describe the changes in operational capabilities as the main outcomes of dynamic capabilities. This indicates a more indirect relationship between dynamic capabilities and performance. These studies essentially focus on the impact of developing operational capabilities in terms of competitive advantage or organizational performance. (Eriksson, 2014.) For example, Macpherson et al. (2004) have found a connection between the outcomes of dynamic capabilities and company growth by observing mediating factors such as opportunity recognition and exploitation. Thus, it can be stated that dynamic capabilities can also have an indirect link to company performance. However, it must be noted that both approaches on dynamic capabilities (direct and indirect links to performance), have their deficiencies and, thus, the topic is in need of more research. (Eriksson, 2014.)

The previous sections clarified the role of antecedents and outcomes of dynamic capabilities. However, the processes through which dynamic capabilities present themselves remain unclear. Thus, the following discussion will take a closer look at the processes and microfoundations through which dynamic capabilities operate in practice to increase further understanding on key activities.

### 2.1.3 Microfoundations of dynamic capabilities

In previous literature, the complexity of dynamic capability processes can be noted through, e.g. the lack of quantitative research as the processes are challenging to de-

scribe through quantitative means. The literature conceptualizes dynamic capability processes as either distinct processes or more generic knowledge related processes. (Eriksson, 2014.) The former mentioned conceptualization represents a smaller portion of the literature and grasps processes such as product or technology development, organizational restructuring and business model adaptation (see, e.g. Eisenhardt & Martin, 2000). According to Eriksson (2014) a more prominent amount of literature describes dynamic capabilities as generic knowledge related processes and describe processes that include accumulation of knowledge, integration and utilization of accumulated knowledge, and knowledge reconfiguration. Thus, it can be concluded that overall, the importance of knowledge management should be emphasized when it comes to dynamic capabilities.

Teece (2007) proposes that the processes of dynamic capabilities can be characterized as microfoundations and describes them as specific skills or processes, organizational systems, decision-making protocols, and disciplines which form the base for enterprise level sensing, seizing, and reconfiguring capacities. Similar findings have been made by various scholars, such as Barreto (2010), Verona and Ravasi (2003), and Wang and Ahmed (2007). The different conceptualizations of the processes and practices of dynamic capabilities are illustrated in Table 2.

**Table 2. Microfoundations of dynamic capabilities and categories related to them. (Teece, 2007; Jantunen et al., 2012.)**

| CATEGORY | FUNCTION | PRACTICES | SIMILAR CATEGORIES |
|---|---|---|---|
| **SENSING** | Scan and monitor environmental changes<br><br>Identify opportunities and threats | Learning from internal and external sources, R&D<br><br>Address customer needs, follow trends<br><br>Systematic use of technological developments and innovations<br><br>Gather information related to innovation through external parties | Ability to sense opportunities and threats (Barreto, 2010)<br><br>Knowledge creation and absorption (Verona & Ravasi, 2003)<br><br>Adaptive capability (Wang & Ahmed, 2007) |
| **SEIZING** | Integrate sensed opportunities/ threats to activities<br><br>Mobilize resources and competencies accordingly | Define business model and customer offering<br><br>Set enterprise boundaries<br><br>Practices to support decisions related to new ventures, partners and distribution channels (avoid biases)<br><br>Build loyalty and commitment | Ability to make market-oriented decisions on time (Barreto, 2010)<br><br>Knowledge integration (Verona & Ravasi, 2003)<br><br>Absorptive capability (Wang & Ahmed, 2007) |
| **RE-CONFIGURING** | Align resources and capabilities | Realign existing resources by reconfiguring complementary assets and processes<br><br>Co-specialize assets internally and with external partners<br><br>Promote commitment and alternative resource allocation through leadership practices<br><br>Knowledge management and learning | Propensity to change the resource base (Barreto, 2010)<br><br>Knowledge reconfiguring (Verona & Ravasi, 2003)<br><br>Innovative capability (Wang & Ahmed, 2007) |

#### 2.1.3.1 Sensing capabilities

In today's changing business environment, different opportunities constantly present themselves across markets. However, the emergence of new market trends and changes is often difficult to recognize. Teece (2007) proposes that opportunities can be discovered through sensing which is a set of organizational activities that enhance knowledge accumulation. As such activities Teece (2007) proposes scanning, creating, learning, and interpreting. Similarly, other scholars have noted that accumulating knowledge is a fundamental element of dynamic capabilities, and that these two cannot be separated. (Pandza, Horsburgh, Gorton & Polajnar, 2003; Eriksson, 2014). Thus, the more knowledge a company acquires, the more opportunities they have to be pursued.

Knowledge accumulation is a crucial process of dynamic capabilities since acquiring new and enhancing existing knowledge is the essence of renewal (Eriksson, 2014). Knowledge can be acquired from both internal and external sources, e.g. through experimental internal learning and different forms of cooperation (Gerard, 2005; Kale & Singh, 2007; Bierly & Daly, 2007). Successful knowledge accumulation and opportunity recognition requires the exploration of both 'local' and 'distant' business environments, including different markets and technologies (Nelson & Winter, 1982 cited Teece, 2007). Therefore, according to Teece (2007) this process requires investments in research and market testing to ease the understanding of the structural evolution of industries and anticipation of supplier and customer reactions. Consequently, he further emphasizes the importance of research and development (R&D) and presents the microfoundations of sensing as various processes. These include processes that control internal R&D and selection of viable technologies, monitoring and exploiting external party innovations and developments in science and technology, and finally, identifying changes in target market segments and customer needs. In other words, sensing capabilities can be considered to be comprised of capabilities to learn and monitor the environment.

Organizational processes such as (R&D) activities are crucial, however, opportunities can be also sensed through so called 'right brain' or 'entrepreneurial' capacities that comprise cognitive and creative abilities of an individual. Therefore, knowledge alone is not enough to detect opportunities because it also requires capacity to identify, sense, and shape developments. (Teece, 2007.) On an individual level, opportunity sensing depends on the individuals' specific knowledge and their capabilities such as creativity, understanding of user needs, and practical wisdom (Nonaka & Toyama, 2007). In turn, on a company level, sensing opportunities can be enhanced through increasing learning capacities of the organization and making sure that sensing activities are conducted on all levels of the company, not solely by a few individuals. Facilitating sensing on all organizational levels and expanding the R&D horizon can be difficult, especially for well-established companies as they can be often set in their ways. (Teece, 2007.) Thus, the role of managers and entrepreneurs becomes vital as it is they who assess the new knowledge and its use. Processes can be learned and adjusted along the way to comply with sensed opportunities but without cognitive and creative capabilities, companies would be thwarted. (Teece, 1986; 2006) Therefore, it could be concluded that dynamic capabilities facilitate companies to innovate and invent profitably.

The capability to sense or create opportunities is not similarly distributed between companies (Teece, 2007). According to Kirzner (1973), companies recognize different opportunities because they have divergent access to information. For example, managers and company size play a vital role in knowledge accumulation as it has been noted that small companies can face challenges when acquiring external knowledge. This is due to that in small companies managers (and entrepreneurs) participate in everyday activities and, thus, lack the time for active knowledge accumulation, contrary to larger companies. Companies, regardless of form or size can facilitate their opportunity sensing process by explicitly or implicitly employing an analytical framework to aid in emphasizing what is important. (Teece, 2007.)

Sensing opportunities can have various effect on economies. Kirzner (1973) proposes that entrepreneurs recognize opportunities through observing shifts in market balance and take advantage of it. This proposition suggests that entrepreneurship restores balance in the economy. However, new knowledge can also be the source of opportunities. Schumpeter (1934) suggests that these recognized opportunities should be exploited to destruct the balance in the economy and to create completely new market structures. A summary of sensing capabilities and their underlying microfoundations are presented in Figure 4.

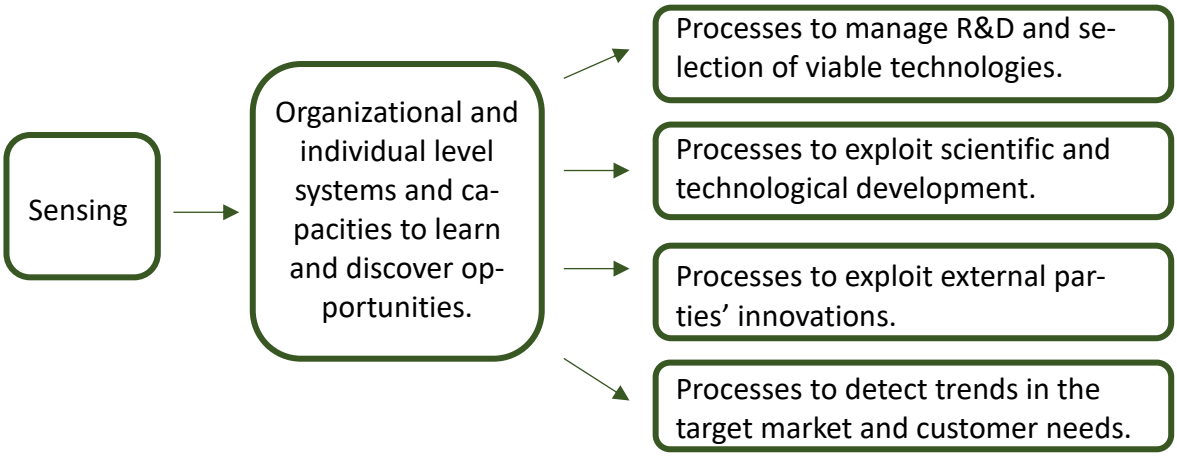


**Figure 4. Sensing capabilities (Altered from Teece, 2007).**

#### 2.1.3.2 Seizing capabilities

Knowledge accumulation is the antecedent of change, however, knowledge integration is the facilitator of that change. Integrating knowledge is, in its essence, merging existing knowledge and experiences with the acquired new. (Eriksson, 2014.) This can be done through various ways but some of the most widely used knowledge integration strategies rely on interaction and collaborative organizational routines, such as total quality management (Macpherson et al., 2004). The successful integration of acquired internal and external knowledge can become a valuable and unique resource that can enhance competitive advantage (Shang, Lin, & Wu, 2009). Knowledge as a resource does not lose its value during use but it rather evolves (Pandza et al., 2003). Therefore, knowledge utilization is a key process of dynamic capabilities as it extracts the benefits of knowledge

accumulation and integration. The utilization process is usually tacit and unconscious and, thus, it is important to share and communicate tacit knowledge, especially on between individuals (Kale & Singh, 2007).

Seizing opportunities relies on knowledge integration and utilization. This process of dynamic capabilities indicates a company's level of responsiveness to opportunities and threats. Based on accumulated information, resources and competencies are organized and used to realize sensed opportunities and capture value through investment and business model development. The underlying microfoundations that characterize seizing capabilities are defining customer solutions and business models, processes of setting company boundaries and controlling the ecosystem of platforms and complements, and lastly, establishing unbiased decision making systems. (Teece, 2007.) Complements and platform management are crucial in today's markets as there is a clear shift from scope and scale economies towards co-specialization. Most products today are systems or platforms and individual companies create more value to the end customer together that separately. (Teece, 2007.)

Teece (2007) proposes that companies can react to emerged opportunities by developing new products and services or establishing new processes. These actions often require the company to invest in development and commercialization. However, companies seizing opportunities might often come across the problem of what, when, where, and how much to invest in. Initially, there are various investment choices for companies to choose from, including specific technologies and designs. However, as a particular choice begins to dominate, the strategic choices in regards of investment become more narrow. As an example, Teece (2007) mentions the automobile industry where at first various engine technologies competed but later on gasoline technology begun to dominate. Consequently, he implies that significant investment activities should be conducted after a certain technology or design gains more prominent market acceptance. Large and more well-established companies are able to wait longer but smaller companies, such as start-ups should opt to the market quickly and tussle. Teece (2007) suggests that fast entrance

and resource engagement are especially vital if customers are particularly reactive or network externalities are present.

Consequently, a business model must be developed to be compliant with the investment priorities and commercialization strategy (Teece, 2007). Nelson (2005) proposes that business model design is just as vital to a company's success as its customer offering is. A compliant business model design consists of, e.g. integrating internal incentives, activities to support co-specialization to manage networks and platforms, and distribution channels. Also, choices regarding technology, target markets, financial terms, and sales strategies must be considered when designing an appropriate business model. (Teece, 2007.) The role of business models is presented more in detail later in the thesis.

According to Teece (2007), companies often fail to address sensed opportunities due to path-dependencies. He elaborates by noting that especially well-established incumbent companies frequently rely on standard procedures, routines, assets and strategies to manage existing technologies and knowledge. This makes them cautious to adopt radical, competency-destroying, noncumulative innovations. This phenomenon alongside with biases such as, certainty effect and excessive optimism can significantly hamper decision making. Therefore, the importance of an appropriate decision making protocol is vital. (Teece, 2007.) To conclude, successful seizing of opportunities requires attention to all underlying microfoundations. The microfoundations related to seizing capabilities are presented in Figure 5.

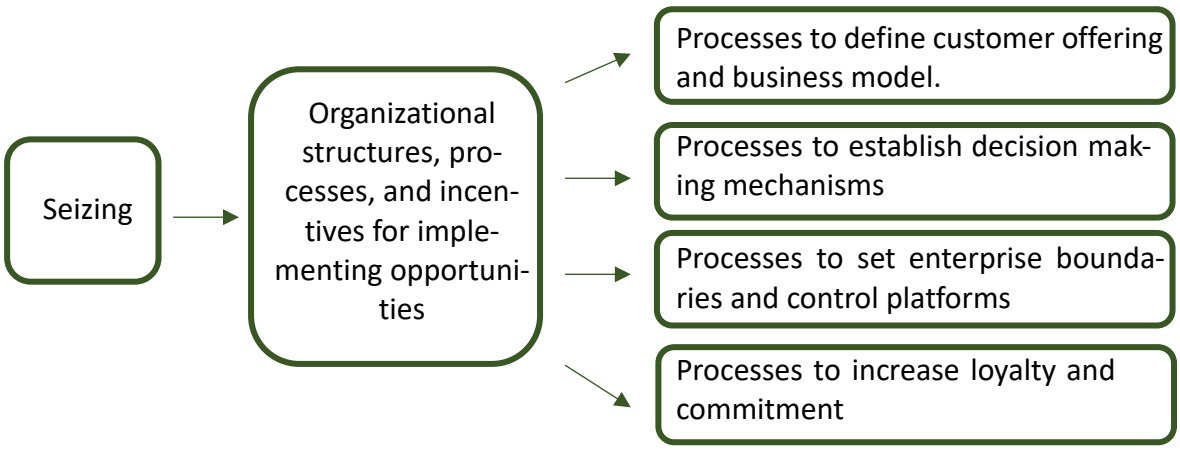


**Figure 5. Seizing capabilities (Altered from Teece, 2007).**

#### 2.1.3.3 Reconfiguring capabilities

A company can achieve profitability and growth through identifying opportunities, investing accordingly, and selecting the correct customer offering and business model. However, solely following the actions and routines previously taken can lead to path dependencies which can prevent the company from achieving *sustainable* profitability and growth. Routines assist in retaining continuity until a shift occurs in the business environment. After this, routines become rather a hindrance as they can lead to choosing the "safe options" and, therefore, reluctance to change. (Teece, 2007.) Thus, the aforementioned unbiased decision making procedures gain even more importance as innovations can make old processes and routines obsolete (Eriksson, 2014). Teece (2007) also notes that innovation rarely comes through incremental actions which is why he underlines the importance of reconfiguring capabilities.

An essential element to achieving continuous profitable growth is the capacity to recombine assets and organizational systems and processes as the organization and environment evolves (Teece, 2007; Helfat & Winter, 2011). The ability to respond to changes has been widely noted to determine success and technological breakthroughs represent only a fraction of successful innovation (Adner & Helfat, 2003). Reconfiguring (i.e. transforming) capabilities are those that revamp existing tangible and intangible assets, such as knowledge to be aligned with organizational structures to support strategy (Teece, 2007). For example, knowledge reconfiguration is a process of creating new combinations from existing knowledge (Grant, 1996) or using that knowledge in different ways or for new purposes to create more value (Jantunen et al., 2005). To conclude, as success often results in routinization, capability reconfiguration is crucial in retaining evolutionary fitness and avoiding path dependencies.

According to Teece (2007), the microfoundations that can be considered as underlying reconfiguring capabilities are multidimensional. According to his research, these include processes to achieve decentralization and near decomposability, co-specialization, prac-

tices related to learning and knowledge management, and processes to establish appropriate governance to avoid path dependencies. If the decision making in an organization is highly centralized, it is less likely to be successively fast to react to customers and new technologies. When decision making is decentralized, a wider set of people are in charge of observing and controlling decisions and, thus, the extra step of communicating to a single decision maker is avoided. Therefore, decentralization enables the identifying of opportunities and threats more comprehensively and swiftly. (Teece, 2007.)

Human resource management (HRM) plays a vital role in achieving decentralization as internal organizational structures must enable managers to observe the environment also through a long-run strategic perspective instead of the daily functional process lens (Järvenpää & Leidner, 1998; Teece, 2007). Organizational proactivity and managerial cognition have been also shown to have an impact on dynamic capabilities. This consists of understanding the needs of a potential market and searching for alternative ways to serve that market while using the right resources. Tools such as scenario analysis and benchmarking can enhance the knowledge reconfiguration process. (Eriksson, 2014.)

HRM is proven to help decompose organizational units into loosely tied sub-units to enhance agility and flexibility and, thus, achieve decentralization (Jantunen et al., 2005). However, it is implied that units should not have full autonomy, i.e. should not be fully decomposed in order for the company to remain coordinated and catch possible economies of scale or scope (Teece, 2007). Due to the nature of start-ups, the organizational structure has often good prerequisites for decentralized decision making. However, Teece (2007) reminds that as companies grow, decentralization must be actively pursued to remain flexible and responsive.

Especially in rapidly changing environments, the need for continuous realignment is high. Literature on strategy, organizational behavior, and organizational adaptation are agreeing with dynamic capabilities literature on the importance of ‘fit’ between strategy, organizational structure, and practices (Teece, 2007). For example, Porter (1996) notes that

while strategic fit between processes is crucial in terms of competitive advantage, it is also vital in order to sustain that advantage. Managers can generate unique value through mixing cospecialized assets within their company (Teece, 2007). Cospecialized assets are assets that are complementary to one another in terms that they create more value when used together. Cospecialized assets are unique and cannot be bought or sold and, therefore, often require integrated operations and management (Teece, 1980). If managed correctly, these assets can result in, e.g. differentiated customer offerings and inimitable cost savings. Due to complementarities and as companies rely on different sets of resources, it is not uncommon that some companies find particular technologies or assets more valuable than others. (Teece, 2007.)

As underlined in the chapters above, intangible assets, such as knowledge are vital in regards of sensing and seizing opportunities and the ability to combine and integrate internal and external knowledge is crucial in terms if company success. Therefore, creating governance and incentive structures that support learning are critical dynamic capabilities (Kogut and Zander, 1992; Nonaka and Takeuchi, 1995; Grant, 1996; Chesbrough, 2003; Teece, 2007). Similarly, monitoring harmful exploitation of knowledge or other intellectual property is equally as important. According to Teece (2007), especially innovative companies that lack experience are prone to neglecting managing the leakage of know-how and intellectual property. The underlying microfoundations of reconfiguring capabilities are illustrated in Figure 6.

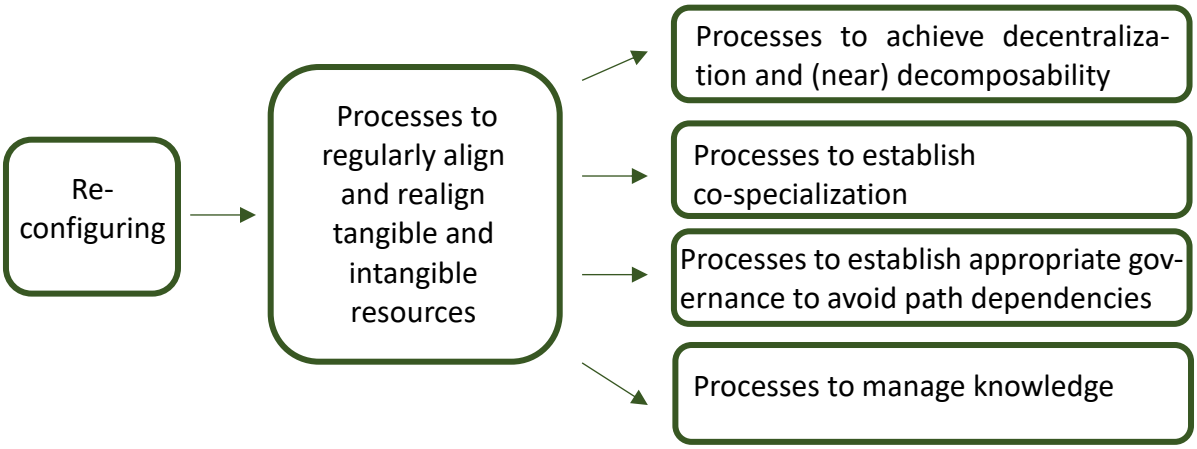


**Figure 6. Reconfiguring capabilities (Altered from Teece, 2007).**

To conclude, there are various conceptualizations of dynamic capabilities. Some scholars conceptualize the topic through their nature, or antecedents, and some through their outcomes (Eriksson, 2014). The antecedents of dynamic capabilities have found to be internal and external and they stem from both individual and organizational levels. The outcomes of dynamic capabilities are either direct or indirect and there remains a debate in literature on this topic. The processes through which dynamic capabilities operate can be conceptualized in multiple ways as well. (Eriksson, 2014) This thesis introduced the framework of Teece's (2007) microfoundations of dynamic capabilities which divides these processes into three categories: sensing, seizing and, reconfiguring. Sensing capabilities refer to the abilities to identify opportunities and knowledge accumulation, seizing capabilities aid in integrating the sensed opportunity and reconfiguring capabilities contribute to the alignment of resources and capabilities to achieve enhanced performance, growth, and competitive advantage. The research on dynamic capabilities is summarized in Figure 7 illustrated as a process.

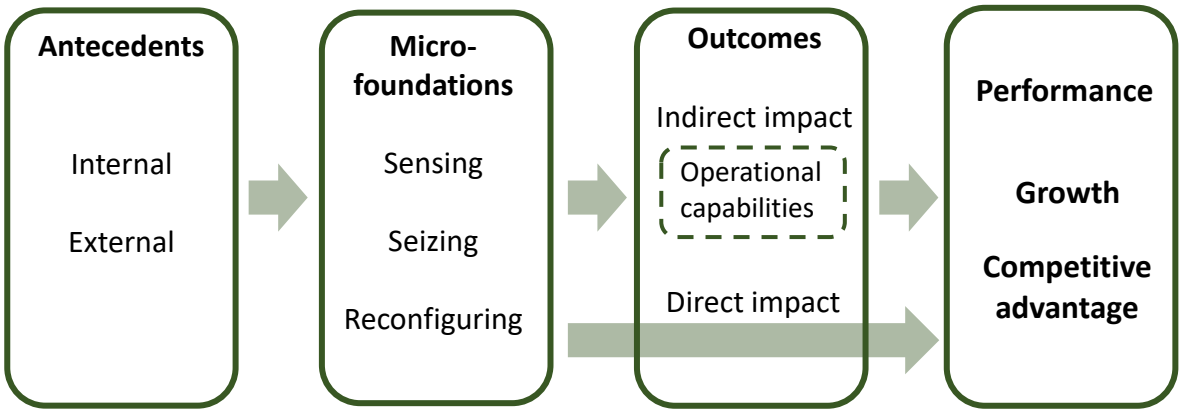


**Figure 7. A summary of dynamic capabilities research (altered from Eriksson, 2014).**

## 2.2 Business model innovation

As competition constantly increases across markets, and profit and growth are more onerous to achieve, strategic decision making receives an even more crucial role (Teece, 2018). The traditional means of differentiation through service or product portfolios are becoming more difficult and, therefore, business model innovation has received increased interest both in research and practice (Chesbrough, 2007). Business models are

highly interdependent with strategy as strategy dictates the requirements for the business model. However, it is the business model through which a company can fully realize its strategy (Casadesus-Masanell & Ricart, 2010).

The definition of a business model is relatively vague in existing literature. This is partially due to that the research on business models dates only back to the 1990s and also that researchers tend to define business models as they see it fit to their particular research. This has led to the term to develop in silos. Therefore, there are as many definitions as there are business models. (Zott et al., 2011.) Generally, a business model describes how a firm generates and delivers value to its customers and further, the systems how the company captures a part of that value (Teece, 2010; 2018). In short, business models are descriptions of how customers are served and how profit is made and, thus, can be described as the DNA of a company (Chesbrough and Rosenbloom, 2002). Several research have compared the definitions of business models and although they are not unanimous, a certain pattern can be recognized. For example, as Zott et al. (2011) demonstrate in their findings, the definitions of business models can vary in terms of conceptualization (e.g. business models as archetypes, activity systems, or cost or revenue architecture) but ultimately they all aim to explain how business is conducted.

Especially in literature regarding business models as cost or revenue architectures, the modularity of business models has been noted. This modularity can be explained as if the entity of the business model is comprised of different categories or components. (Dubosson-Torbay, Osterwalder, & Pigneur, 2002.) These components can be further combined into modules. For example, Schön (2012) notes that in a business model the identification of cost and revenue models, and value proposition is key. In a similar manner, Osterwalder and Pigneur (2010) recognize nine business model components.

Similarly, as a business model must be aligned with strategy, it must also be aligned with internal operations, resources, capabilities and structures. If the business model and internal elements are not coordinated the company cannot deliver the planned customer

value. (Ritter, 2014; Birkinshaw & Ansari, 2015 cited Teece, 2018). Incremental transitions in business models are easier to implement than radical ones since only a small portion of the organization or process requires revamping. Small changes to the business model rarely yield in superior competitive advantage or disruptive changes in the environment, however, they do have a positive effect on enhancing value capture. More significant changes to the business model require considerable tangible and intangible resources and their alignment. Thus, for example, traditional taxi companies are not following the business models of ride-sharing companies, such as Uber because they possess an entirely different resource base. (Teece, 2018). Therefore, it can be concluded that internal alignment is vital in achieving a profitable business model.

Similarly, resources alone are not enough to achieve profitability and growth as they must be aligned and converted into a sufficient strategy and business models. The fundamentals of this lie in the RBV and dynamic capability approaches. Therefore, a crucial factor when implementing business models is to align it with customer needs to gain a continuous stream of profits. A successful business model is also scalable. Thus, it is critical to decide which customer segments to pursue first as the initial segments partly determine further scalability. In business model design, companies should also take into consideration how the business model differentiates them from competitors on the market. Whether differentiation is necessary or not depends on the company's strategy. When a company harnesses its resources to comply with its strategy and develops a business model that aligns with customer needs, determines customer segments, and pays attention to scalability and differentiation it can create competitive advantage. (Teece, 2018.)

It is important to note that competitors might eventually try to copy the business model. However, Teece (2010) implies that depending on the business model, competitors might lack the capabilities to fully implement it or they might be too late to the market to do it. For example, platform business models can be characterized as winner-takes-it-all because often the first mover creates an established customer base that is difficult to

later interfere with. Platform industries have gained an increased share in current economies as the business model often does not require traditional tangible assets. Platform-based business models are more prone to enable rapid entry into new markets rather than focus on expansion existing ones. (Teece, 2010.) These aspects might partially explain why these types of business models are increasingly common amongst start-up companies.

Developing a functioning and profitable business model is crucial, however, as the environment changes, the need for business model innovation arises (Teece, 2010; 2018). Business model innovation is processes or actions that revamp extant business model components and generate a new or an evolved business model (Geissdoerfer, Vladimirova & Evans, 2018). Business model innovation has been researched from many different angles, such as innovation sources and barriers (Chesbrough 2003; 2010), value innovation (Kim & Mauborgne, 1997), and organizational transformation (Johnson et al., 2008). The understanding of the fundamental concepts can aid in the process of business model conversion.

Geissdoerfer et al. (2018) demonstrate in their collective study that a significant number of scholars describe business model innovation as an organization's reaction to opportunities or threats, and more specifically how they create diversification and innovation by reconfiguring business model components. Some studies, such as Teece (2018) emphasize the importance of dynamic aspects and argue that even incremental changes to the business components characterize as business model innovation. However, Geissdoerfer et al. (2018) conclude that there is no consensus on what specific phenomenon should be categorized as specifically business model innovation.

According to extant literature, business model innovation can emerge in various forms depending on the circumstances and, therefore, it acts as an umbrella term for various types of development scenarios. For example, according to Geissdoerfer et al. (2018), the initial form of business model innovation is categorized as the 'start-up' phase where

an entirely new business model is designed. When it comes to business model transformation, the existing business model is altered into a different business model. Lastly, business model innovation can appear as diversification and in this scenario a parallel business model is developed to operate alongside an existing one. Similarly, a company can also acquire a new business model instead of developing it itself. (Geissdoerfer et al., 2018.) The different kinds of business model innovation are presented in Figure 8.

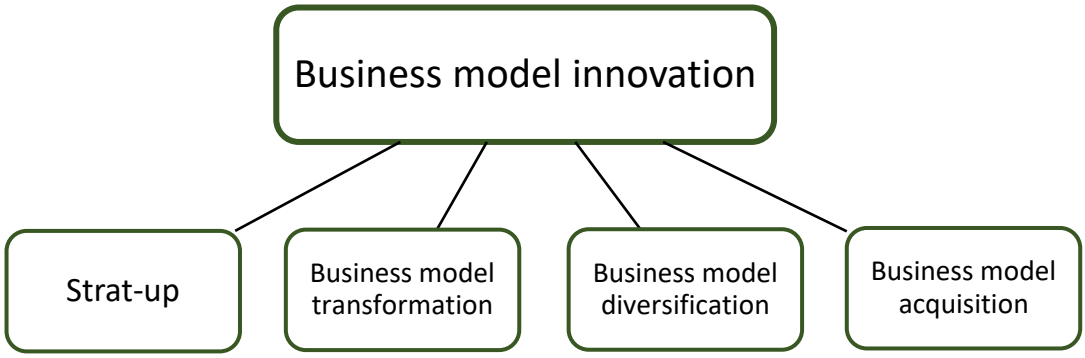


**Figure 8. Categories of business model innovation (Geissdoerfer et al. 2018).**

Regardless of the form of innovation, the changes to a business model must be justified. When innovating new business models, companies must take into consideration the risk of cannibalizing their business, turning core capabilities obsolete, as well as opportunity and transaction costs (Leonard-Barton, 1992; Christensen, 1997; Chesbrough, 2010). Resistance of the employees towards change is a constrain for business model innovation and, therefore, must be realized early on in the process in order to be avoided. In addition, the company's own reluctance towards change should be also addressed since it can act as a major hindrance in the process. (Teece, 2010; Zott et al., 2011.) Business models are a set of processes and incentives which must be aligned with different technologies. Thus, thorough understanding of both processes and technology is required, otherwise the designing of the proper organizational structures and business models can be impeded. (Teece, 2007.) It can be started as a conclusion that business model innovation is a set of integrative processes.

### 2.2.1 Business model innovation in start-up companies

Due to increased rivalry, similarly to more established companies, start-ups are also forced to focus increasingly on business model innovation. Especially in highly dynamic environments, opportunities tend to pass by faster and start-ups must be constantly in the lookout for new innovations to discover and capture these opportunities. (Teece, 2018.) Shane and Venkataram (2000) argue that this ability to timely identify and exploit opportunities is crucial to the survival of small companies and is a key element in entrepreneurship. Thus, it is vital that a start-up's business model is designed to exploit the company's capabilities to leverage the full potential of adaptability.

Despite that start-ups tend to have limited resources and experience, they do have favorable qualities that can facilitate innovation, such as flexibility and low hierarchy. However, partially due to these qualities, start-ups heavily rely on trial and error in their strategy instead of traditional strategizing. (Schramm, 2018.) Therefore, start-up companies can be characterized to operate in continuous change and the planning of a business model can turn out to be a difficult task. Amit and Zott (2001; 2010) note that start-ups in their early stages can benefit from designing their initial business model as it can help to pin point the company's boundaries and characteristics and, thus, facilitate the clarification of the start-up's value creating potential and monetizing logic. A successful business model is also scalable which is why it plays an important role for start-ups throughout their whole life cycle (Schramm, 2018). However, as start-ups are prone to frequent change and learning through trial and error, the initial business model is rarely the most suitable or profitable one which, in turn, leads to the need to continuously reinvent it (Teece, 2010).

Research indicates that continuous improvements to the business model enhance adaptation to the changing environment and demand which is crucial in terms of maintaining competitive advantage (Teece, 2010). Therefore, business model innovation can be stated to be vital in regards of renewing and transforming business (Zott et al. 2011) also in start-up companies. In addition to competitive advantage, well-timed and progressive

adjustments to the business model enable start-ups to maintain their continuous operations which, in turn, enhances the flexibility of the business which yields in further advantages. As companies gradually increase their capacity to generate, capture and transfer value through their reinvented, efficient processes, they simultaneously increase revenues. (Teece, 2010.)

Similarly as Schramm (2018) proposes in the context of strategy, experimentation is argued to be beneficial in the adaptation of start-up business model innovation as well (Brown & Gioia, 2002; Shirky 2008). Experimentation is noted to facilitate the innovation process of the business model as companies can test different options. Similarly, McGrath (2010) suggests a discovery approach where start-ups try multiple business models simultaneously and, thus, innovate their existing business model. According to this approach, start-up companies can effectively scan and discover new opportunities and processes to adapt to their business model (McGrath, 2010; Clausen & Rasmussen 2012). Bocken (2015) also shows support for this approach and suggests that start-ups should regard business model innovation as a facilitator of successful business. Thus, it can be concluded that business model innovation is critical for start-up companies in a sense that by continuously adapting to environmental changes and exploiting opportunities start-ups can enhance competitive advantage and flexibility and, thus, performance.

### 2.2.2 Tools for business model innovation

The most successful business models rarely appear by themselves but rather are a result of continuous adjustments or occasionally even complete reconstructions. These transformative actions are often easier to carry out for start-ups than more mature companies because start-ups have less established assets and processes to revamp. (Teece, 2018.) There are various tools and concepts how a successful business model can be composed and further developed. These tools are there to support decision making and facilitate the comparison of different business models.

A useful concept for business model innovation could be to explore business model patterns which in its essence is learning from reoccurring phenomena that has been demonstrably favorable in the past (Amshoff, Dülme, Echterfeld & Gausemeier, 2015). Business model patterns can be generally depicted as successful business models or their components that can be applied to other companies (Osterwalder and Pigneur 2010; Gassmann, Frankenberger & Csik 2014; Amshoff et al. 2015). In other words, different business models can be examined and based on their characteristics categorized as a specific pattern. Further, the pros and cons of different business model patterns can be compared and determined whether the pattern is sufficient. A few well-known business model patterns are, e.g. the add-on model used by Ryanair, the subscription model used by Spotify and the freemium model adapted by LinkedIn. It is proposed that business model patterns could decrease the complexity when it comes to characterizing business models. (Weking, Hein, Böhm & Krcmar, 2018.) However, some complexity arises from the fact that there are a myriad of business model patterns and characterizations related to them as, e.g. Osterwalder and Pigneur (2010) recognize five business model patterns and Gassmann et al. (2014) identify 55 in their research. Nevertheless, start-ups can benefit from exploring their possibilities (McGrath, 2010; Clausen & Rasmussen 2012).

Osterwalder and Pigneur (2010) define nine universal building blocks as the foundation for business models. In their study, they apply these elements into a framework, most well known as the “Business Model Canvas”. The value proposition is in the center of the framework representing products or services that the company offers to its customers as value. The surrounding building blocks are related to the infrastructure which consists of key partners, activities, and resources. The other side of the surroundings are related to customers (i.e., key customer segments, relationships, and channels), and finally the financial factors, such as cost structure and revenue systems. These are aspects that support the creation, delivery, and capture of value, i.e., support the realization of the value proposition. This can be accomplished by meeting the needs of customer segments and delivering value through correct customer relationships and (distribution) channels.

Such value can be created with key partners, resources, and activities. To be able to capture the created value, companies must pay attention to the revenue streams to monitor how the targeted customer segments produce revenues, meanwhile acknowledging the relation of fixed and variable costs. (Osterwalder & Pigneur, 2010). The business model canvas is illustrated in Figure 9. There are various extensions of the original canvas, such as the triple layered business model canvas (Joyce & Paquin, 2016) and the lean canvas (Maurya, 2012).

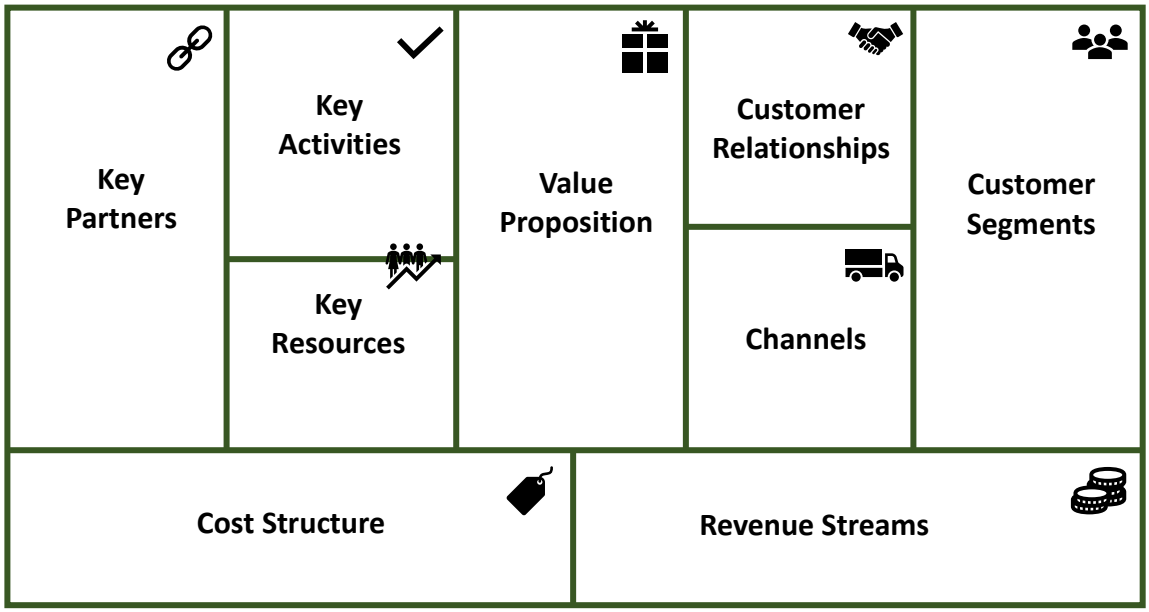


**Figure 9. The nine constructing elements of the Business Model Canvas (Osterwalder & Pigneur, 2010).**

Literature on start-up business model innovation pronouncedly points in the direction of the "lean start-up" concept by Ries (2011). This concept is especially applicable to start-ups that have agile business models where it is easy to quickly test, replace or discard ideas that do not work. Therefore, this approach has spread widely amongst especially Silicon Valley start-ups as software-intensive business models are quite "light" in a sense that much software can be repurposed and feedback can be gathered fast. In the lean business model canvas the outline of the framework remains similar to the original by Osterwalder and Pigneur (2010) but some of the blocks are replaced with more agile versions to facilitate the testing of the framework (Maurya, 2012). Key partners is re-

placed with ‘problem’ and key activities with ‘solution’. Key resources become ‘key metrics’ and customer relationships turn into ‘unfair advantage’. However, the logic is the same as with Osterwalder and Pigneur’s (2010) model as the value proposition remains in the middle, representing the heart of the business model.

Although the lean canvas can be a useful tool for specifically start-up business model innovation, it has its limitations. The lean start-up approach is more useful the less physical the product is. (Armstrong, 2017.) For example, the development of a physical prototype can take several years depending on technology and purpose. In addition, even though a start-up company structure might flexible and agile, not all start-ups operate in an agile environment where feedback can be received quickly to facilitate the trial and error process of business model innovation. Thus, the Business Model Canvas (Osterwalder & Pigneur, 2010) is a more universal model that can be applied by start-ups as well.

Companies are required to make uncertain decisions regarding the nature of costs, and the behavior of customers and competitors. Thus, the validation of a business model is a set of effort, informed guesses and judgement. It is not only comprehending the underlying choices to be made but also gathering evidence to support assumptions and speculations about the business environment. (Teece, 2007.) These same fundamentals apply to all types of companies as it is the nature of business to make strategic decisions and align resources. To conclude, no correct universal business model design exists. The choosing and developing of business models requires dynamic capabilities to be harnessed.

## 2.3 Synthesis – the role of dynamic capabilities in business model innovation

The literature review discussed research regarding dynamic capabilities and business model innovation. The main discoveries in both literatures were that the concepts are rather new and, thus, although the research is rich it is inconsistent as there are a myriad of different definitions and conceptualizations. This section combines these two areas of

research and introduces a framework through which critical dynamic capability practices that enable business model innovation can be studied.

Dynamic capabilities are facilitators of adaptation and change in order to cope with environmental shifts. This concept was presented first in the literature review to gain understanding of the underlying microfoundations and processes of how companies react to change. Teece's (2007) tri-fold conceptualization of sensing seizing and reconfiguring was adopted for the purposes of the thesis. In this framework, sensing is related to identifying opportunities and gathering knowledge to be further implemented (seized). Business models are an important aspect in the seizing process as learned new things or sensed opportunities are implemented to the company's operations. Reconfiguring capabilities come into play when the company's resources and capabilities must be realigned to serve the organization in a different way. (Teece, 2007; Eriksson, 2014.)

Research indicates that business success is determined just as much by organizational innovation, e.g., business model designs, as it does by product or service innovation (Chesbrough, 2007). Business model innovation is processes or actions that revamp existing business model components and generate a new or an evolved business model (Geissdoerfer et al., 2018). In practice this means transforming the capabilities and resources of the company to achieve decrease in costs, increase in revenues, or delivering new customer value proposition. These actions enhance the sustaining of competitive advantage. (Teece, 2010; Čirjevskis, 2019.) Determined by the circumstances, business model innovation can have many forms, such as the invention of a completely new business model or variations of transformation of an existing model (Geissdoerfer et al., 2018). In addition to making strategic decisions regarding investments, companies must also choose and create the right business model that defines their commercialization strategy (Teece, 2010). Therefore, business model innovation can be stated to be a crucial factor in terms of company performance.

Combining dynamic capabilities with the concept of business model innovation is challenging as both topics are quite wide. However, they seem to be rather complementary. Business model innovation is closely related to dynamic capabilities as these capabilities to change and adapt enable innovation (Teece, 2018). Dynamic capabilities are also the essence of implementing new ideas to the business model as they enable changes to, for example key activities and resources to reduce costs, increase revenue streams and deliver a superior customer value proposition. According to Čirjevskis (2019) the building blocks of business models are relevant in all three sets of dynamic capabilities. Sensing capabilities could be argued to contribute to the selection of key activities and customer segments and seizing capabilities aid in implementing distinct sets of resources and capabilities to achieve the desired change in building block within the business model. Lastly, reconfiguring capabilities support the transformation process by aligning relevant resources, processes, and capabilities. Through these transformation processes, the company can achieve a new cost or revenue structure, or perhaps a new customer value proposition through which it can preserve competitive advantage. (Čirjevskis, 2019.)

It can be concluded that it is inevitable to combine the two research areas to gain a comprehensive outlook of coping with environmental change and how it affects companies and, respectively, how companies generate this change to the market to tackle competition. The two concepts are complementary in the sense that business model innovation could be regarded as a result of dynamic capability practices. The activities that enable business model innovation and implementation can be studied through the model presented in Figure 10. This model was developed based on aspects of the research and framework considering microfoundations introduced by Teece (2007) and the framework of the Business Model Canvas (Osterwalder & Pigneur, 2010). The contexts of sensing, seizing, and reconfiguring capabilities are combined with key aspects from the Business Model Canvas. Modifications to both frameworks are made in order to ensure applicability to the start-up context. Thus, the empirical model takes a three by three matrix form.

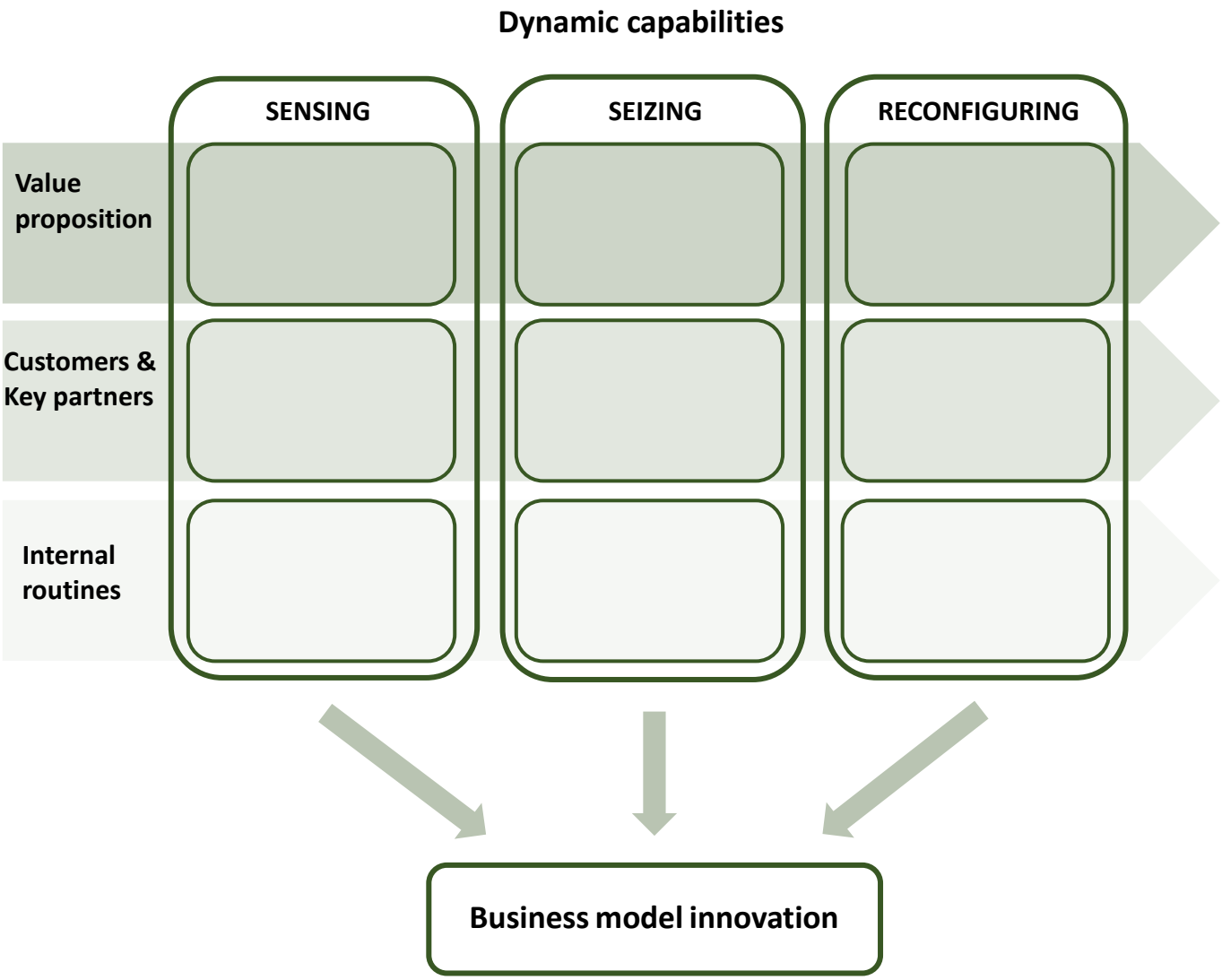


**Figure 10. A model for studying and analyzing dynamic capability practices that enable business model innovation.**

# 3 Methodology

This chapter introduces the methodological choices used to provide answers to the research question and objectives. The strategy and method of the research are described alongside with the case selection and data collection processes. The means by which the data is analyzed is explained and, finally the validity and reliability aspects of the thesis are discussed.

## 3.1 Research approach and strategy

The research was conducted as an exploratory multiple case study. A case study is a commonly used strategy in business research as it is a sufficient means to assess complicated social phenomena (Yin, 2018.). Case studies shed light on real-world events and try to understand different aspects of situations by exploring the former or current matters and their effects (Eisenhardt, 1989; Yin, 2018: 4–5). Further, Yin (2018: 13) argues that case studies are especially suitable in circumstances where the research focuses on *"a contemporary set of events, over which the investigator has little or no control"*. Thus, it can be concluded that case studies help in understanding contemporary situations and issues and why they exist.

Research can be exploratory, explanatory, or descriptive and the case study research approach is applicable to any of them (Yin, 2018: 8). This thesis' research is explorative as it examines start-up companies and their different dynamic capabilities that influence business model innovation. It also aims to identify distinct dynamic capability practices and processes that enable this innovation. Exploratory case studies are a great means to interpret phenomena and issues as it is its purpose to find out what is happening and to assess issues from different angles (Saunders, Lewis & Thornhill, 2007: 133). As the literature start-up dynamic capabilities and business model innovation is scarce there is no clear-cut insight on the phenomena. Therefore, an exploratory research approach was applied.

Case studies are empirical inquiries that investigate contemporary and complex phenomena in-depth, meanwhile considering real-world and specific contexts. Thus, the results of case studies cannot be generalized. This has been noted as one of the main weaknesses of this research strategy. (Yin, 2018: 15, 18-19.) However, case studies are great for examining complex phenomena and in-depth studies as the research can be modified according to the circumstances (Farquhar, 2012: 38). Case studies can be conducted in various ways, such as single case studies, multiple case studies, or embedded case studies (Yin, 2018: 24). This research was conducted as a multiple case study which implies that the study consists of more than one case. This allows the examination of each case individually and simultaneously, the comparison of the cases. As there are multiple cases, the results of the study can be better generalized. Through disclosing the most crucial dynamic capability practices in the most successful cases, start-ups can identify what practices enable their business model innovation process.

## 3.2 Research method

A research method is selected based on what kind of data is required in order to be able to answer the research question. There are three different commonly used research methods for data collection and analysis which are quantitative, qualitative, or a mix of both methods (Williams, 2007; Yin, 2018). Quantitative research generates or uses numerical data while qualitative research operates through non-numerical data, such as text, videos, and pictures (Williams, 2007; Saunders et al., 2007: 145). This research was conducted using qualitative research methods. Williams (2007) notes that a key characteristics of qualitative research is that it takes into consideration social phenomena.

Qualitative research data is often categorized as primary and secondary data. Primary data is information gathered by the researcher, e.g. from interviews or observations whereas secondary data is already existing data such as, annual reports, for instance. (Saunders et al., 2007: 354.) For this research, one-to-one semi-structured interviews were chosen as the source for primary data collection. A semi-structured interview has pre-planned questions and themes that the interview shall cover. Thus, it is ensured that

all relevant information is gathered for the research during the interview. Compared to structured interviews, semi-structured interviews allow extra questions and more in depth discussions hence, the interviewer can adjust the questions to the situation. (Saunders et al., 2007: 312; Eriksson & Kovalainen 2016: 94– 95.)

## 3.3 Case selection process

The cases for this research were selected based on various criteria. As this study aims to examine dynamic capabilities that enable business model innovation in the whole start-up organization, the first case company criteria was that there are multiple people involved in the start-up. Correspondingly, the cases were selected to be Finnish start-up companies with similar ages and funding stages. The seed funding stage was selected as it indicates a younger start-up age and, thus, perhaps less established processes. In addition, all of the case companies operate in the technology industry which is typical for start-up companies. These were the criteria selected in order for the cases to be comparable.

However, to maximize generalizability, the case companies have different product or service offerings and, thus, cater to different industries. This aids in examining whether a dynamic or non-dynamic operating industry effects dynamic capabilities and if customer offerings interfere with the innovation process. Overall, the aim was to select successful start-up companies from the technology industry and to study them both individually and through cross-case analysis. The case companies wish to remain anonymous. Thus, four cases were selected for this study: Company A, B, C, and D. The case companies ages vary between 3 and 4 years.

## 3.4 Data collection

As above mentioned, the primary data was collected by using semi-structured interviews. There were 8 interviews in total conducted by interviewing two representatives form four companies. All of the interviewees were either founding members of the start-up

or represented titles, such as CEO, COO, and CTO. By interviewing such representatives, it ensured that the interviewees had a great overall picture of the company and, thus, were able to answer comprehensively. Some of the interviews were carried out face-to-face but the majority of them were held as remote interviews. The topic of the thesis was explained to the interviewees beforehand alongside with some of the terminology and structure of the interview. The length of the interviews varied between 30-75 minutes and an average interview lasted around 48 minutes. The interviews were held in Finnish as it was the native language of the interviewees. The interviews were recorded and transcribed to ensure that all gathered information would be analyzed. The materials were later translated to English by the author. More specific information of the interviews is presented in Table 3.

**Table 3. List of interviews.**

| Interviewee | Title | Case | Interview length | Date |
|---|---|---|---|---|
| 1 | Founder/ COO | Company A | 35 min | 18.5.2021 |
| 2 | Founder/ CEO | Company A | 68 min | 21.5.2021 |
| 3 | Development director | Company B | 42 min | 23.5.2021 |
| 4 | CEO | Company B | 33 min | 28.5.2021 |
| 5 | CTO/ Lead Developer | Company C | 30 min | 24.5.2021 |
| 6 | Chairman of the board | Company C | 48 min | 24.5.2021 |
| 7 | Founder | Company D | 75 min | 17.6.2021 |
| 8 | Chairman of the board | Company D | 55 min | 17.6.2021 |

Each interview started with the interviewee describing their company's initial vision, strategy, and business model after which they described where they are today. This provided a basis for the interview and provided a tangible basis for the interviewee to reflect on. Also, in the interview it was convenient to circle back to the initial story for examples. The interview questions are presented in Appendix 1. The questions and their order was

determined prior the interview to ensure all relevant information were to be gathered. However, the interviewees were encouraged to speak freely and the questions were adjusted accordingly if needed.

## 3.5 Data analysis

The data of this research is analyzed in two phases. First, the case companies are analyzed as individual units through a within-case analysis. This method enables the researcher to familiarize with each case and after careful examination point out key aspects. It also provides the researcher with comprehensive knowledge on each case to facilitate the further analyzing. Thus, as a result, four comprehensive analyses are conducted and the case companies' dynamic capability processes are examined in detail. Through this method, a great knowledge base of the cases is gathered before moving on to conducting cross-case analyses and possibly forming generalizations. (Eisenhardt, 1989.)

The within-case analyses of the case companies take place by first reading through the collected and transcribed interview material a few times. Key phrases and themes are highlighted from the material following the method of Gioia, Corley & Hamilton (2012) of searching for patterns that create the structure of each concept. Based on this method, the highlighted interview data is summarized into shorter sentences, i.e. first-order concepts. Similar first-order concepts are allocated into categories and based on these categories, so called second-order themes are formed. The second-order themes are modified into sentences that fit and represent each category the best. Furthermore, the second-order themes are categorized into aggregate dimensions which, in this study are sensing, seizing, and reconfiguring. Thus, each within-case analysis fills the figure presented in Figure 10. An example of the data analysis process is provided in Figure 11. In addition to filling in the figure, each case and category is discussed in detail and quotes from the interviewees are presented to confirm the findings. The within-case analyses are conducted identically regarding all case companies.

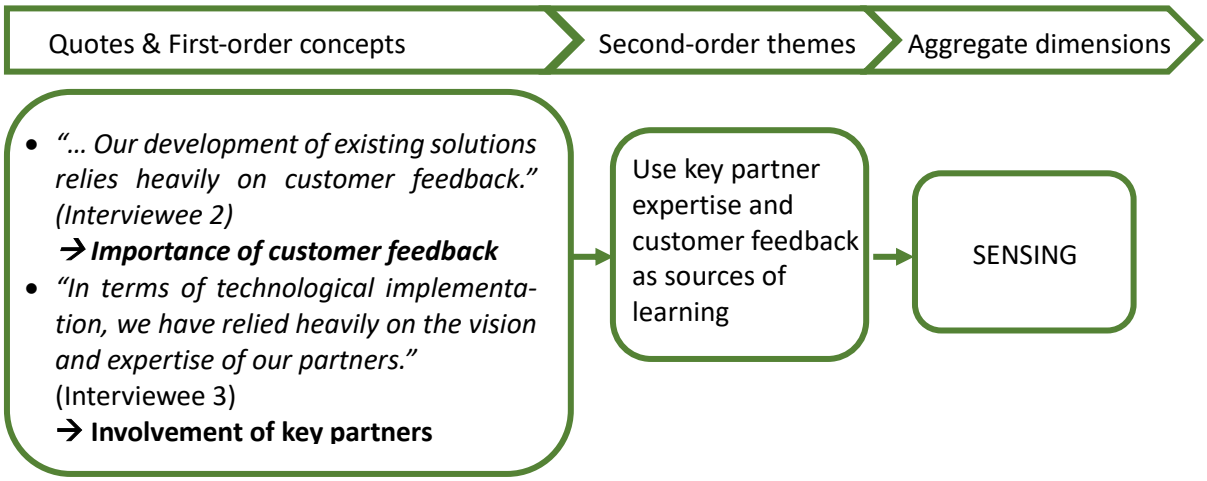


**Figure 11. An example of the data analysis process.**

Following the within-case analysis, the study continues to conduct a cross-case analysis of the companies. The aim of the cross-case analysis is to find similarities in the cases. This phase of the analysis reveals whether there are common practices within the four Finnish start-ups and what those practices are.

## 3.6 Validity and reliability

The validity and reliability of the study must be considered in order to ensure the quality of the research. Reliability refers to the data collection procedures or analysis processes and whether they will yield similar findings if conducted several times. In other words, reliability concerns the repeatability of the study. A reliable study ensures that different researchers should be able to repeat the study and achieve similar findings using the same methodology. (Saunders et al., 2007.) In this study, reliability is ensured by clearly describing the data collection and analyzing methods. Also, the interview materials are carefully transcribed and act as a solid foundation for further analysis. However, as Saunders et al. (2007) note, semi-structured interviews are not the most reliable and, in fact, they are not necessarily even meant to be. Semi-structured interviews represent only a certain time, and in this case, the case companies static situation and indicate the practices they are doing now. Thus, if the research would be conducted using the same cases in a few years, the results could be quite different.

Validity can be categorized as internal and external. Internal validity considers data accuracy and examines if the study assesses what it was intended to. External validity concerns the generalizability of the study. These issues were addressed by first sending the questionnaires out to a few interview candidates and asking if there were any questions or comments on it. As a researcher, it is crucial to make sure the interviewees understand the questions in order to collect valid answers. During the actual interviews, a lot of follow up questions were asked. Moreover, the interviewees were asked to evaluate the final within-case analysis. According to Saunders et al. (2007) the use of follow up questions and respondent validation are effective means to ensure internal validity. What comes to external validity, the results are somewhat generalizable to other Finnish start-up companies. This is because there are multiple case companies applied to the research. Nevertheless, it must be noted that the results represent only the Finnish technology industry and, thus, the results cannot be directly generalized to start-ups in other industries or geographical markets.

# 4 Findings

In this section, the results and findings of the empirical study are presented. First, the case companies will be presented and examined individually through within-case analysis. Next, the cases will be studied through a cross-case analysis in order to detect similarities amongst them. Thus, this chapter uncovers common dynamic capability practices that enable business model innovation in Finnish start-up companies. Finally, the findings are discussed and reflected on based on existing research.

## 4.1 Within-Case Description and Analysis

In order to gain full understanding of each case company, the within case analyses begin by shortly introducing and describing each case. Following this, the cases are analyzed following the dynamic capability conceptualization of sensing, seizing, and reconfiguring capabilities. Each of the three dynamic capability microfoundations are divided into four practices based on internal and external elements of a business model. Thus, there are four different themes of practices to provide structure for the analysis. Each case company's key practices are collectively presented at the end of each within-case analysis.

### 4.1.1 Company A

Company A is a four-year-old start-up and operates as an access control solutions provider. They possess multiple solutions in their portfolio and cater to a wide range of different markets. Their initial vision was to provide solely digital, smart phone operated door buzzers to housing companies for a one-time payment, however, they have since changed their business model significantly. Currently, their revenue model is based on monthly fees and customer offerings range from digital door buzzers to booking systems. They have created an ecosystem of different complementary solutions for housing companies. Currently, the company is reaching out to new markets, such as sports halls, that can also benefit from their solutions.

*Sensing capabilities*

From the beginning it was clear that learning and identifying new opportunities was highly need based in company A. The process of finding solutions was described to be often initiated by market research or customer feedback and the importance of key partners was highlighted. The company seeks for new potential key partners by using their networks and scouting the market. It seems that there is a consensus in the company on the importance of partners in the innovation process, as both interviewees estimated that around 40% of ideas regarding the execution of an innovation come from partners. This was also pointed out as a main learning source in the company.

> *"To find completely new solutions we do market research to find solutions that are in demand and to which there is not enough supply for... Our development of existing solutions relies heavily on customer feedback." (Interviewee 2)*

> *"Often [the process] begins so that we have an idea that we want to execute and then we just investigate existing solutions and ask around from our partners who have helped us before with developing products… and that way find the best and often most cost effective way to solve a problem." (Interviewee 1)*

External trends and market shifts are monitored through continuous benchmarking and keeping up with the latest news. The interviewees reported that information is collaboratively and continuously shared in meetings or messaging platforms.

> *"In practice, we regularly go through what new has happened… But it [observing the surroundings] is an ongoing, subconscious process that is always in the background. We keep each other in the loop all the time." (Interviewee 1)*

To conclude, sensing in Company A could be described as an ongoing process that is triggered by external factors, such as customer feedback or discussions with key partners.

*Seizing capabilities*

In the case of company A, key partners and customers are highly involved in the process of seizing an opportunity as well. Key partners, such as suppliers and other collaborative

parties act as experts when the company discusses how a certain innovation should be executed and implemented. Together with its key partners the company lays out the specs of the innovation which is often a new or new version of the value proposition.

> *"In order to implement the innovation, we research implementation methods and consult experts. After that, the developers are selected, the project framework is set and development begins." (Interviewee 2)*

On the other hand, customers are the key players when mapping out the features as well as the costs and possible revenue streams of the innovation.

> *"It is extremely important that we know how much the customers are willing to pay because when you operate in a start-up setting there are so many opportunities and if you were to develop every idea you would not have time to do anything else. So if there are no people willing to pay it is kind of waste of time." (Interviewee 1)*

The company emphasizes the importance of having open communication in the sensing phase and the team has regular meetings multiple times a week. Close communication and joint decision making is noted to enhance team commitment.

> *"Decisions are made collaboratively and there are no decision making protocols as our team is so small." (Interviewee 2)*

> *"When decisions are made together, everyone stands behind those decisions and this way harmony is preserved in the company." (Interviewee 1)*

Dynamic communication and decision making is vital as the company aims to minimize competitor threats and imitation by moving fast and becoming the largest player in its field. The current market is stated to be rather rigid and competition is quite saturated, hence a new start-up can move fast under the radar and become a market leader without competitors noticing.

*Reconfiguring capabilities*

Both interviewees underlined the importance of defining the purpose of the innovation both in terms of strategy and customer value. As the company has not received any funding yet, during the past years the aim has been to gain as much revenues as possible to finance upcoming innovations and changes. Through a process of trial and error the core customer offering has formed around the solutions that provide most customer value. New customer segments have been found and the strategy has been formulated along the way. Currently the company ensures that innovations are in line with their strategy by making sure they complement the existing core services and, thus, aim to create a wide ecosystem of solutions.

> *"We try to ensure that innovations are in line with our strategy by comparing the strategy to possible outcomes of the innovation. This is why sometimes our strategy can change as a result of an innovation." (Interviewee 2)*

The company focuses on their big vision and aims to dynamically move forward towards it. The need for more finances has lead the company to think creatively and not be afraid to make changes to the business model. Also, along the way as the company grows and learns, new best practices emerge. The company aims to encourage this change by allocating resources accordingly. However, as resources are scarce, the search for new funding is more relevant than the allocation of existing resources.

> *"We provide resources to the needs where we see the best returns... As a result, we must give up on personal resources, such as pay in order to support more important functions elsewhere… But often in this [start-up] business instead of allocating existing resources you have to go out to look for new resources to realize innovations. So instead of internal restructuring and chasing customers, we try to get funding." (Interviewee 1)*

The team works closely together and communicates actively. They do not have distinct roles but rather operate based on their skillset. Knowledge is transferred as a result of working together on projects and teaching each other.

> *"Knowledge and expertise transfer in our small team mainly by working closely together." (Interviewee 2)*

Company A has a complex customer offering for a start-up as it consists of both a physical product and software. This brings its own challenges to the company's operations which can be also noted through their dynamic capability processes. The company relies quite heavily on its external partners' expertise when it comes to the execution of an innovation. Also, as the company's target market is unconventional, they rely on their customers' opinions. This challenges the trial and error process as the company cannot switch projects as swiftly. However, they compensate the rigidness of the market by being highly dynamic themselves and communicate actively both internally and with partners. The key dynamic capability practices that enable business model innovation in company A are presented in Figure 12.

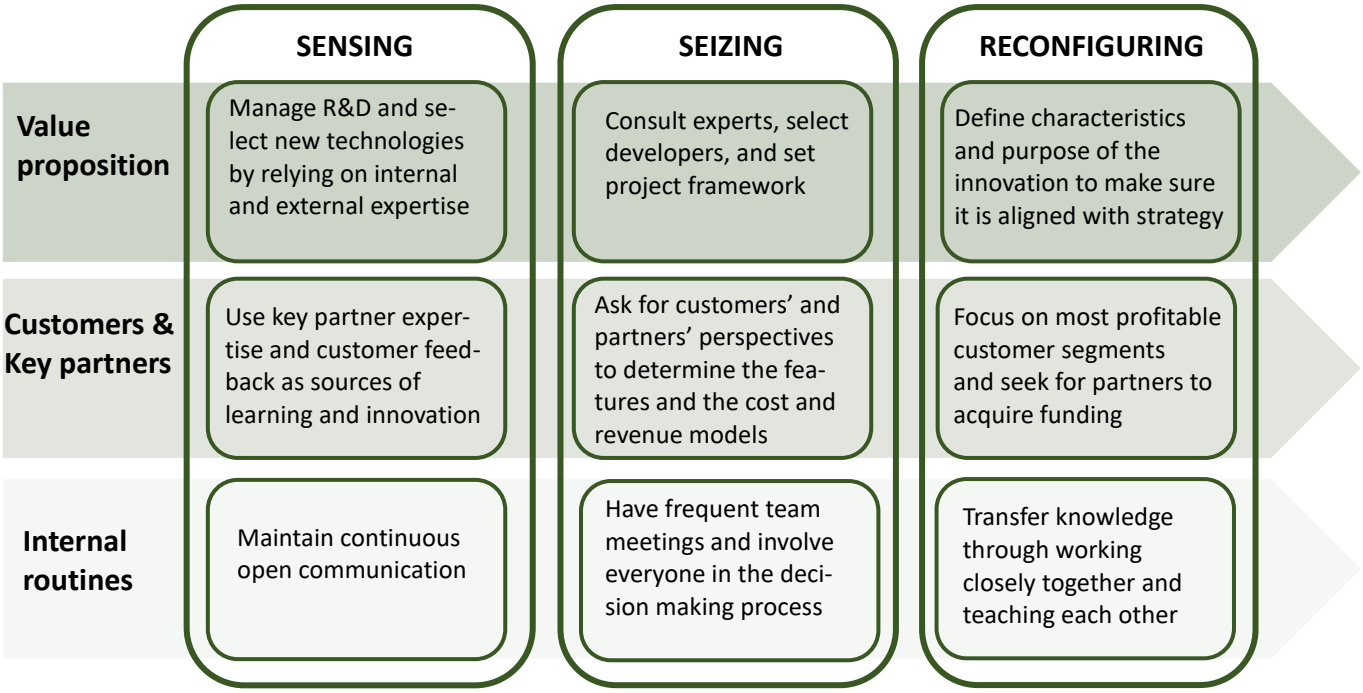


**Figure 12. Key practices in case Company A.**

### 4.1.2 Company B

Case company B provides easy booking of artists for parties and events. The company operates as an online platform where artists and customers interact with each other without any added expenses from ticket sellers. There are several changes made to the business model since the initial launch but and the most significant changes are related

to the revenue streams. Initially the revenue model consisted of customers' monthly subscriptions and artists' access payments. Currently, the pricing is based on a provision from the concerts and gigs of artists. In addition, the company provides music services to the public sector for a monthly fee.

*Sensing capabilities*

Practices related to sensing capabilities in case company B seem to be ongoing, sometimes unconscious processes. Collaboration and closely working together as a team rise as key elements of sensing capabilities. The company emphasizes that the management of development of the service relies heavily on the core team and their visions. Brainstorming both within the team and with external parties as well as feedback were raised as key points when managing the service development process.

> *"The process of finding new solutions is often joint brainstorming sessions where the whole team only meets for the purpose to innovate the development of the platform… And what comes to existing solutions, we aim to develop operations through the feedback we receive." (Interviewee 4)*

> *"In terms of technological implementation, we have relied heavily on the vision and expertise of our partners." (Interviewee 3)*

Key partners are found through networks and are highly relevant especially in technical innovation. The interviewees also emphasize that the company has also learned from its partners, both technicalities but also general processes and best practices within the industry.

> *"With regard to gig ticket sales, we approached well-known ticket sales players such as Ticketmaster, etc. Through them, we have learned a lot about how ticket sales organizations work and what other additional costs come in addition to their provision. This has also given ideas for innovations, such as developing our own platform for live streaming of concerts." (Interviewee 4)*

Collaboration with the artists and customers is also highlighted as important and a major source for innovation ideas. They contribute by helping keeping up with trends and are a source of feedback. The company follows trends also by following the news and discussing them in weekly meetings.

*Seizing capabilities*

The evaluation of innovations and projects take place in weekly meetings or designated brainstorming sessions. The team aims to evaluate how a certain change in the building block of the business model would affect the rest of the model. For example, it was discussed in the interviews that commonly if a lucrative revenue model arises, according changes to the customer offering, i.e. value proposition are often made. Thus, it could be noted that for company B the main driver for changes in a business model is the prospect of a more beneficial revenue model. Overall, this process seems to be somewhat unconscious in the company.

> *"… We often make our own assessments of the business model, and evaluate how, for example, the earnings model works for the service in question. After that, we start with a model that we see fit, which we further modify based on the feedback we receive." (Interviewee 4)*

> *"The process is not actually planned, but is more of an organic process that arises on its own". (Interviewee 3)*

Decision making in company B is joint which, according to the interviewees results in inclusivity and an open atmosphere. The team also aims to examine everything without assuming anything they cannot be sure of.

> *"We make decisions together and this is our only established protocol." (Interviewee 3)*

A contributor to the open atmosphere is also the high motivation of the employees. It is mostly dictated by the fact that everyone in the company is a partial owner of the firm.

*Reconfiguring capabilities*

As above mentioned, all team members participate in the decision making process in the company. The organizational structure has no hierarchy and the team members do not have dedicated roles. Knowledge is transferred through daily work and teaching each other. The atmosphere is highly entrepreneurial in the company also in the sense that they move from project to project and aim to prioritize the next most profitable thing. Thus, strategy and vision are not brought as the focus in daily operations. However, the team does consider innovations from several view points and does underline the importance of growth.

> *"So far, we have always done the next most important thing.. and because of the small resources, the re-allocation of resources is very agile, from one development project to another… The prospect of abandoning initial innovation ideas and strategies is not eliminated if more growth can be expected with a new innovation." (Interviewee 3)*

> *"Our resources are continuously in full use and allocated according urgency. There are no careful planning or decision making protocols related to it. (Interviewee 4)*

This summarizes the level of trial and error mentality in company B and how much the prospect of growth determines its business model and daily operations. The aim to grow characterizes the operations of company B as they move from project to project based on how much revenue each of them can bring. They operate where the prospect to grow is the largest. This might require changing the entire business model and starategy meanwhile the focus on which stakeholders remain key can change. This is facilitated by both close internal and external collaboration. The key dynamic capability practices of this case are presented in Figure 13.

The company is highly dependent on the knowledge of its team but also in the skills and expertise of their stakeholders, such as the performing artists of the platform. Knowledge is transferred within the team over time through various projects by, for

example, teaching each other. Processes for managing knowledge have yet to be developed in company B.

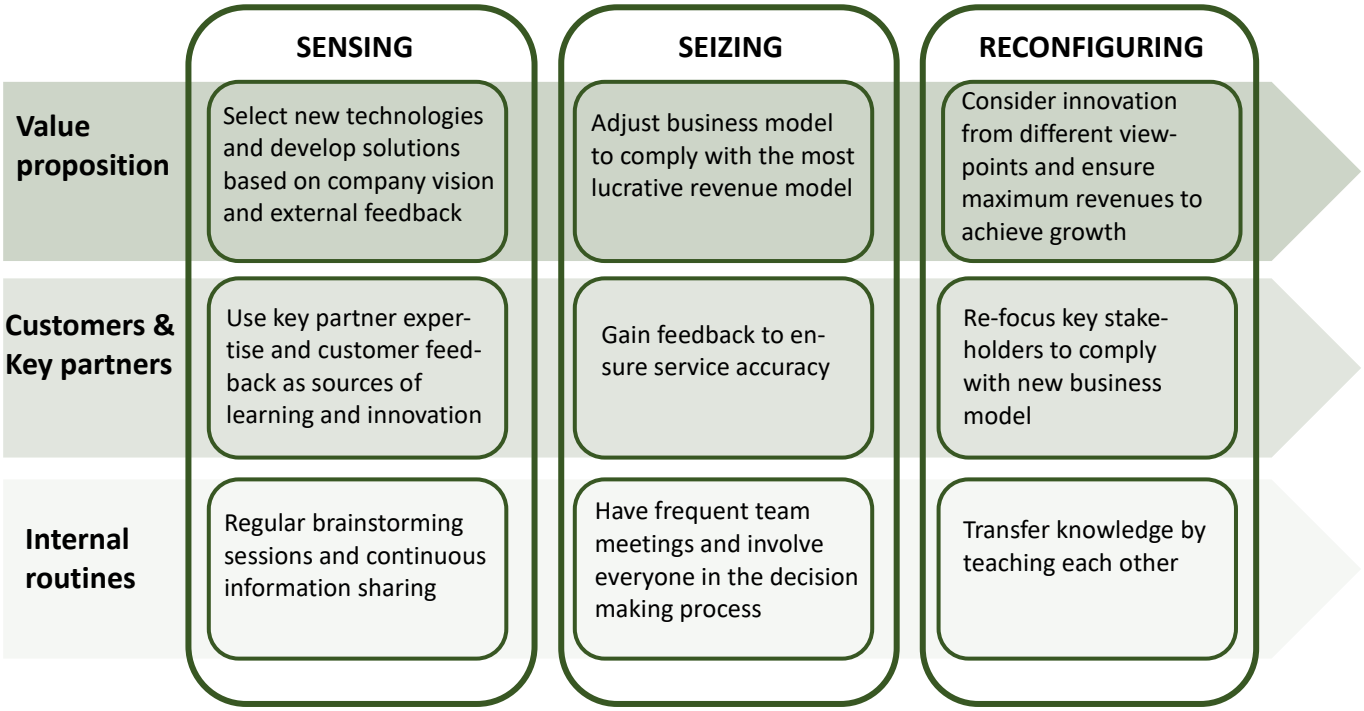


**Figure 13. Key practices in case Company B.**

### 4.1.3 Company C

Company C is a software provider for customer service quality assessment and staff coaching services. It has operated for four years and is based on the simple idea of improving sales and employee satisfaction. The idea has been clear from the start and the company has built a software to realize it. The business has been incrementally modified as additional services and improvements have been developed to the software. Currently, the company is aiming to grow through increased sales and internationalization.

*Sensing capabilities*

The company selects technologies and manages R&D through the expertise of the Lead developer and his team. More demanding innovation ideas are discussed with the help of external parties and experts. As the company's customer offering is a software, a main

criteria to how technologies are selected is how widely that technology is used around the world and whether there are developers to be recruited for it.

> *"In more unfamiliar matters, we look to our partners for support and help." (Interviewee 6)*

> *"The selection criteria [for new technologies] are how widely spread its use is in the world and whether developers can be recruited for them swiftly if necessary." (Interviewee 5)*

The company relies heavily on its networks when looking for potential key partners. Key partners have been useful for the company when learning about how to do business within their market. The company also monitors competitors through its networks and keeps up with trends by following annually published reports and general news.

Deep understanding of the customer segment is ensured by asking for feedback from them. Often the feedback does not result in major new innovations but rather in incremental improvements to the software. Customers are also a great source of learning for the company as their feedback can determine whether there is a market for a new innovation or not.

> *"We gather feedback from customers and occasionally receive new ideas from them regarding the features of the software… We also try to find potential paying customers already in the 'feedback gathering phase'." (Interviewee 6)*

In conclusion, sensing capabilities in company C rely heavily on internal expertise and experiences, especially in regards to development. However, learning sources come from the outside in the form of customer feedback and key partners.

*Seizing capabilities*

Company C moves from sensing potential opportunities to seizing them by internally discussing them and involving several people from different departments. This ensures that all viewpoints are taken into consideration. The main points the team discusses are

the costs and whether the idea is generic enough to serve various customers. The company does not currently discuss ideas that are not related to the software or are not complementary to it.

> *"As a developer, I am always the biggest brake as I want the innovation to be easily saleable and to bring added value to customers and a bigger margin for us." (Interviewee 5)*

There is an open communication culture in the company and decisions are made by discussing first. The interviewees emphasize that there is room for failure in the company. By practicing joint decision making and establishing an open atmosphere the company aims to increase employee motivation. The effects of Covid19 are visible as occasional hiccups in employee commitment, however, the company strives to lead by coaching and regular discussions. The main issue with leadership has been the lack of social contact.

> *"Commitment during Covid19, when people are sitting in their own saunas at work with foggy cameras and children shooting with water guns in their ear, causes headaches for the management. We have a model of continuous monitoring in our own product segment, i.e. we monitor and discuss with employees often, once a month… and we use the so-called coaching leadership to maintain interest in our company." (Interviewee 5)*

Motivated employees rise as a key discussion topic for company C. As the company operates within the software industry, there are no means by which it could protect its business. Instead, they aim to gain the lion's share of the market. Therefore, employee commitment is crucial.

*Reconfiguring capabilities*

The employees in the company have a clear idea of their tasks as the teams hold weekly meetings where each employee sets their own goals for the week. This also acts as a means to monitor progress. The company also encourages open innovation culture by

encouraging new ideas. However, this is something the interviewees agree they should focus on more, especially during remote work.

> *"We have well-defined job descriptions, but not so well-defined tasks." (Interviewee 6)*

> *"Ideas should not be shot down but should be praised. Of course, there is still room for development with this." (Interviewee 5)*

The company has no clear processes to avoid path dependencies and as a small company, they have not considered this as something to consider yet. Regardless, as the company has a clear startegy, decisions are made to support it. Thus, to ensure that a new innovation is in line with the strategy, the team discusses whether the innovation can be commercialized and executed with existing resources and if it is compliable with the core product. In addition to internal discussions, knowledge is transferred via multiple online platforms during projects.

> *"Kowledge transfers with weekly meetings, MS Teams discussions and the separate teams sections there. In addition, the Trello app is often used where ideas related to app development are logged." (Interviewee 5)*

In the case of company C the independency of employees and trusting internal experitse and processes rise as key points. The company does rely on partners and customers for ideas and learning, however, not to the extent where these ideas would disrupt the core service. The company seems to have moved pass the trial and error phase and found the best practices and target markets to operate within. They do have a clear strategy for sales and growth and seem to trust that the established internal systems will carry them to the goal. The key dynamic capability pactices of company C are displayed in Figure 14.

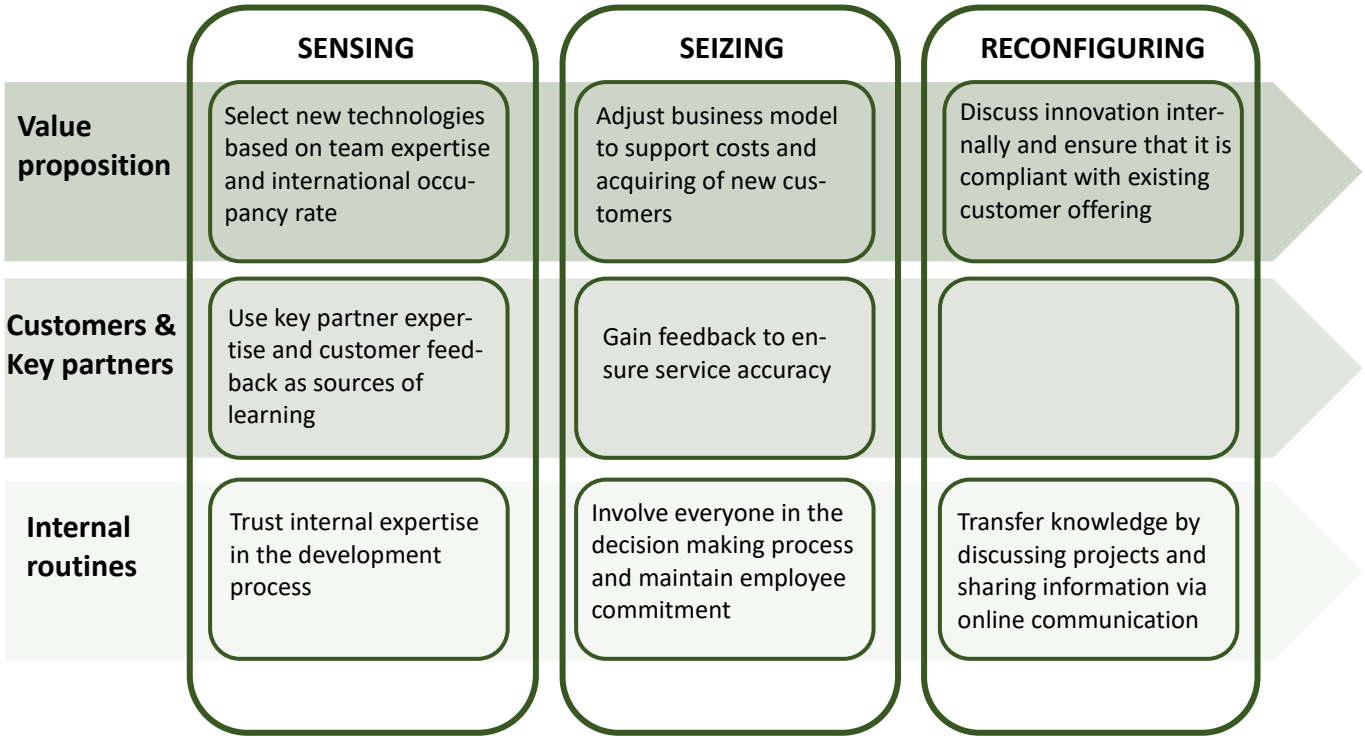


**Figure 14. Key practices in case Company C.**

### 4.1.4 Company D

Company D is a developer, marketer and seller of a SaaS based networking service and provides related support and value-added services. The company is 3,5 years old and they offer their networking services for events and networks. Their aim is to mainly target physical events organized by organizations and professional event organizers. However, due to the Covid-19 pandemic, the company has had to modify their customer offering. They have developed their service to cover virtual and hybrid model events in addition to live events. The company's service operates on a monthly payment principle.

*Sensing capabilities*

In company D, the selection of technological solutions is largely the responsibility of the technology team which consists of two people. However, more fundamental decisions are made at the board and management team level. The technologies are selected based

on the company's experiences, peer reviews, and persistence assessments of technology team leaders. The company emphasizes that they want to incorporate technology that is relevant and can be seen to have a long life cycle.

> *"We want to use technology that is already at least somewhat established, is expected to be continuous, and has gained interest among developers." (Interviewee 7)*

As the selection of technologies relies partially on peer reviews, the finding of key partners is necessary for company D. They are often found through networking, googling, or searching through the news or through reference group portals. Partners also act as a source of new knowledge. For example, from potential investors the company has gathered new point of views how their business is seen by others and how it could be improved.

> *"Through partnerships, new, smaller development ideas also emerge. They are usually related to better coordination between us and the partner's products or services." (Interviewee 8)*

Similarly, learning from customers is also emphasized as a crucial. The company identifies new target market segments and changing customer needs by conducting market surveys, and following the news about the choices of large event organizers and companies. To ensure in-depth understanding of customer segments and customer needs the company collects customer feedback on a daily basis to keep up with development ideas and needs. Feedback is gained from customer events, conversations with customers, and especially discussions from sales situations. Selecting target customers is, however, not as straightforward, given the industry of the company.

> *"The applicability of customer segments to new ways of operating is revealed on a slower cycle as we gain more and more insight and experience-based information." (Interviewee 8)*

Regardless, the company highlights the importance of co-innovating with their customers and evaluates that around up to 75% of new innovation ideas would come from customer collaboration. As the choices of key partners and customers are monitored, so are competitors.

> *"Competitors are constantly monitored. Likewise, potential larger customers' choices and solution models are monitored, for example in virtual and hybrid events." (Interviewee 7)*

The company also aims to keep up with technological developments by following the news, and so-called weak signals, customer feedback, and conducting market research.

*Seizing capabilities*

Once an opportunity is sensed, it is registered into a system called Trello. The implementation of the idea depends on its scope and use. Systems are important in implementation, however, the process is a largely a result of continuous discussion between the management, sales, customer service, and development teams.

> *"If the idea is really useful and (or) absolutely important and reasonably small, it will be developed almost immediately. However, the main part [of the ideas] remain on the wish list, from which they are discussed from time to time and some part is scheduled for the next stages of development." (Interviewee 7)*

When implementing an idea, company D assesses technology and product features by relying on internal vision and customer feedback and demand. As a general rule, the company aims to implement product features that are generic and serve a large part of the customer target group. The earnings model is also adjusted to the innovation at hand as a monthly pricing model is not always suitable and occasionally the payer might not even be the customer but rather the customer's customer. Thus, selecting the correct target customers in order to achieve the desired goal of the innovation is crucial in the company.

*"We also strive to adapt and profile our solution directly to carefully thought-out and selected target groups. The service itself may even be exactly the same as the service of a more generic customer, but it is pre-engineered in terms of content and parameters for a specific target group." (Interviewee 8)*

Decision making is not centralized in the company and it rather relies on close discussion between teams and efficient communication using different systems. Biases and prejudices in decision making are aimed to be avoided by questioning internal and external suggestions and assessing whether the need for a specific idea is real and are there paying customers for it.

*"Nice to have wishes and demands are always a threat." (Interviewee 7)*

Company D aims to avoid competition by positively standing out in the market and attracting the majority of customers. Thus, potential risks related to competitors are addressed by aiming to be the largest and most well-liked player in the market. Therefore, the company strives to ensure employee commitment in order to be able to provide customers with first-class service. This is achieved by keeping an open discussion and spirit, and rewarding success.

*Reconfiguring capabilities*

Open innovation culture is enabled in the company by frequently discussing and taking notes meanwhile keeping everyone involved and aware of what is going on. The tasks of the employees are only loosely defined as the company aims to avoid silos. By arranging positions as such, they can be more agile. Company D has created metrics to regularly assess sales, marketing and customer service. However, the organizational structure has low-hierarchy where everyone knows each other's job descriptions. As tasks are partially overlapping and loosely defined, resources are more easily re-allocated where they are needed. Through this agile way of working the also company aims to avoid path dependencies and sticking to old ways and to make sure innovations correspond with strategy.

*"Ensuring that innovation is in line with our strategy is, in practice, largely decision-making based on our own internal discussion and judgement." (Interviewee 7)*

Knowledge is managed and transferred in company D through different online systems and ongoing conversation. There are several systems and means of communication depending of each role. The company also regularly has short morning and weekly meetings to exchange information.

For company D, collaboration and co-innovation with customers rose as a key aspect. Through practices related to customer interaction the company is able to gain feedback, assess the market and further develop its services. Close internal collaboration was also highlighted as a major business model development enhancing aspect. The key dynamic capability practices of company D are presented in Figure 15.

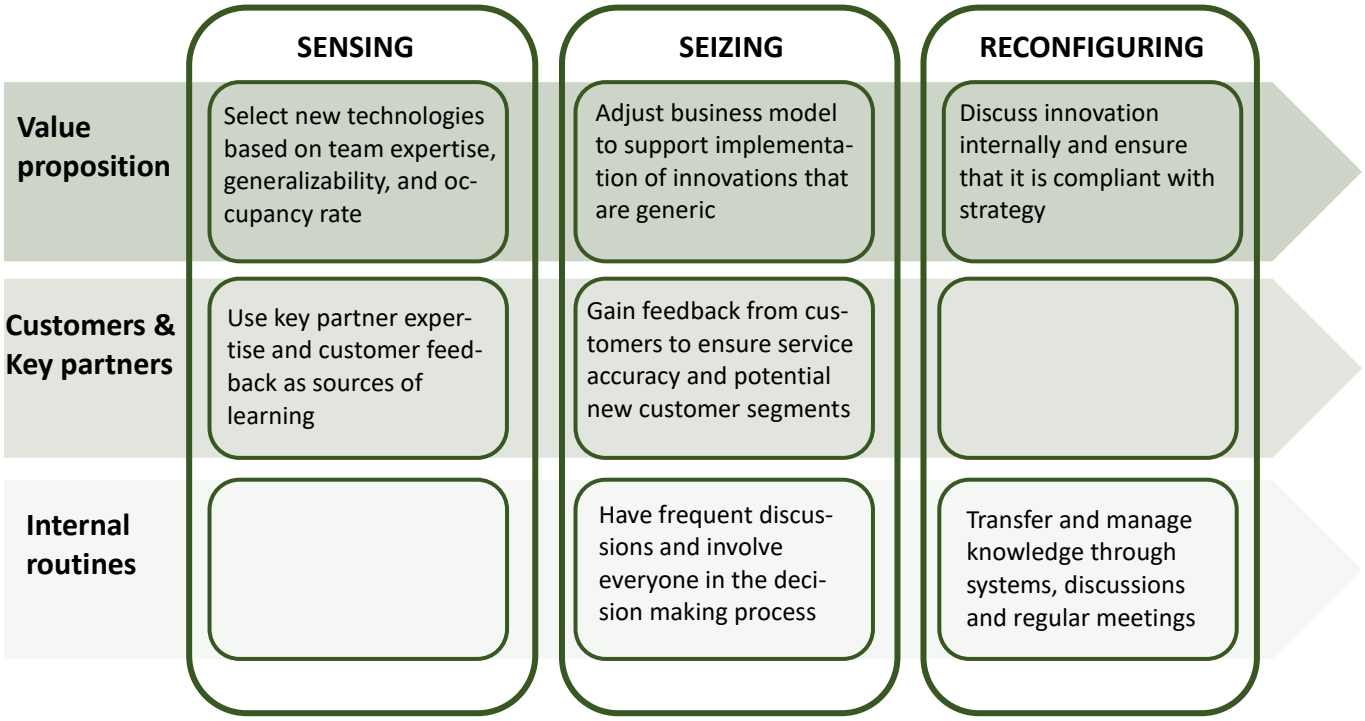


**Figure 15. Key practices in case Company D.**

## 4.2 Cross-Case Analysis

This cross-case analysis synthesizes the findings of the within-case analyses by pointing out and examining similarities from the cases. This is done in order to find common key dynamic capability practices that enable business model innovation in start-up companies. By examining similarities between four cases the aim is to detect generalizable practices. The discussion follows a similar order as the within-case analyses, beginning with sensing capability practices, followed by seizing and lastly, reconfiguring capabilities. In conclusion, this analysis brings light onto the dynamic capability practices of start-up companies that contribute to business model innovation.

### 4.2.1 Sensing capabilities

A key theme that emerged in the interviews with the case companies was their dependence on external expertise. Internal expertise was regarded as highly valuable as well but the emphasis was often on how much they rely on their key partners' know-how and advice. The finding of such key partners turned out to be mostly a result of working on different projects and networking. The importance of key partner's expertise can be regarded as expectable as start-up resources are scarce, since knowledge is a resource.

As a second key theme in sensing capabilities, feedback from customers was pointed out. Gathering feedback ensures the company that their product or service is relevant and functioning in the eyes of their users, however, it also acts as a means to receive new ideas for innovations. All companies reported that they highly value interactions with customers and that they have gained ideas from them and have decided to further innovate them.

Following the news was mentioned as the primary means by which the companies aimed to keep up with external trends and shifts in the environment. Especially industry news was emphasized but the importance of unrelated phenomena was also brought up.

Benchmarking competitors activities was also mentioned as a common means of monitoring which was, however, less of an active practice than following the news. The two do not exclude each other as the most common tool for benchmarking was said to be following the news. Thus, as a summary, all case companies were active news readers and very aware of their business environment.

Interaction with the team was brought up as one the main aspects of sensing capabilities. It was common in the case companies to constantly report everything to each other in real-time down to the smallest of details. The team members did not necessarily wait until the team meetings but instead shared knowledge on messaging platforms to ensure that everyone is constantly updated with the latest information. Therefore, the main finding here was that the case companies were highly active knowledge sharers and communicators which enhanced sensing.

### 4.2.2 Seizing capabilities

When asked about selecting and modifying the business model, all of the case companies started to talk about their revenue models, instead of their business holistically. However, an interesting finding was that their business model innovation did not consider the building block of revenue model but rather the block of value proposition (see Figure 9 for Business Model Canvas). It was common to innovate the product or service and that way find where the most revenues lie through a trial and error process, instead of innovating the revenue model itself. This finding is controversial in a sense that all of the case companies reported that they aim to do business 'revenues first' as their goal is to achieve growth. This indicates the lack of understanding on business model design in general amongst start-up companies and that the context of innovation is strictly associated with product or service innovation to this day, regardless of many research indicating business model innovation being similarly profitable.

Customer feedback and key partner expertise was emphasized by the case companies in the seizing and implementing phase as well. Through customer feedback the companies

are able to ensure the need and desired outcome for the product or service innovation. Respectively, through key partners' expertise the companies were able to determine the costs and technical execution of the innovation project. Both interaction with customers and partners were reported to be somewhat continuous, naturally depending on the project. To conclude, all case companies emphasized the importance of collaboration with external parties not only in the sensing but also during the seizing of opportunities as well.

All of the case companies were determined to gain the lion's share of the market by applying a disruptive market approach. As the companies do not possess other strategic tools to keep their ideas safe, they rely on their first mover advantage. This is reflected on the companies seizing capability practices as well. By testing the market and assessing customer needs the companies aim to ensure that they possess comprehensive market knowledge. Another key aspect that was highlighted in the sensing processes was team dynamics. Especially inclusive decision making was emphasized as a crucial practice. Inclusivity was ensured through having frequent team meetings and involving everyone or people from various teams in the decision making process. This was also reported to increase open innovation culture and commitment to the company. In conclusion, in the midst of disrupting their target markets, the case companies underlined the value of team work and communication.

### 4.2.3 Reconfiguring capabilities

Reconfiguring capability practices were quite difficult to discuss with all the case companies as resource allocation seemed to be a relatively unconscious process. The companies commonly constantly re-allocate their resources because they are so scarce that they need to be moved from one project to another. As a main finding and major difference to Teece's (2007) framework, and thus more established companies, the case companies focus was on acquiring new resources, such as funding, instead of focusing on re-allocation of their resources. Change and resource allocation is so constant in the case companies that they do not consciously decide on re-allocation or other re-structuring

activities but the need more or less decides for them. As a conclusion, the case companies focus on gaining more resources through funding instead of re-allocating existing monetary assets.

As a commonality, it was also found that change is not feared in the case companies. This was emphasized when asked about the companies' activities to ensure that innovations are aligned with strategy. The typical answer was that if a new innovation (product or service) can be considered more lucrative than the original, the business model and even strategy can be changed. Naturally, these types of decisions were reported to require careful discussions. However, arguably, a similar change in a large company would take more time and resources. Thus, a key finding is that strategy and the business model are swiftly changeable if the innovation prospects more revenues and growth. Another key point that was emphasized was that although there are many great ideas, not all of them are further innovated. It was brought up that the focus is often on the core customer offering and the development of complementary services and products. This is due to the resource scarcity explained above and that not all ideas are executable. Thus, the capability to pick and choose the right ideas receives increased importance.

Regardless that the case companies were operating in different industries and the teams were constructed of different compositions and equipped with varying knowledge, there were clear commonalities across the cases. The main source of knowledge transfer was to constantly teach each other by working together on different projects. The teaching process was implied to be rather unconscious and happed of on the side of every day work. It was common that in the team everyone had their own specialty and the tasks were delegated accordingly. The importance of the team and working together was emphasized in all the case companies.

Commonalities were easy to find from the cases using the developed model by examining each business model related segment in each dynamic capability category. Similar aspects were highlighted by the companies and, thus, relatively similar points were filled

in to the same boxes in the cases. Therefore, the models are partially alike in the within-case analysis sections. This indicates that regardless of the industry they cater to, start-up companies' dynamic capability practices are relatively similar. Thus, as a conclusion it could be noted that company type and size determines dynamic capabilities more than their industry. The similarities found in the four cases are summarized and illustrated in Figure 16.

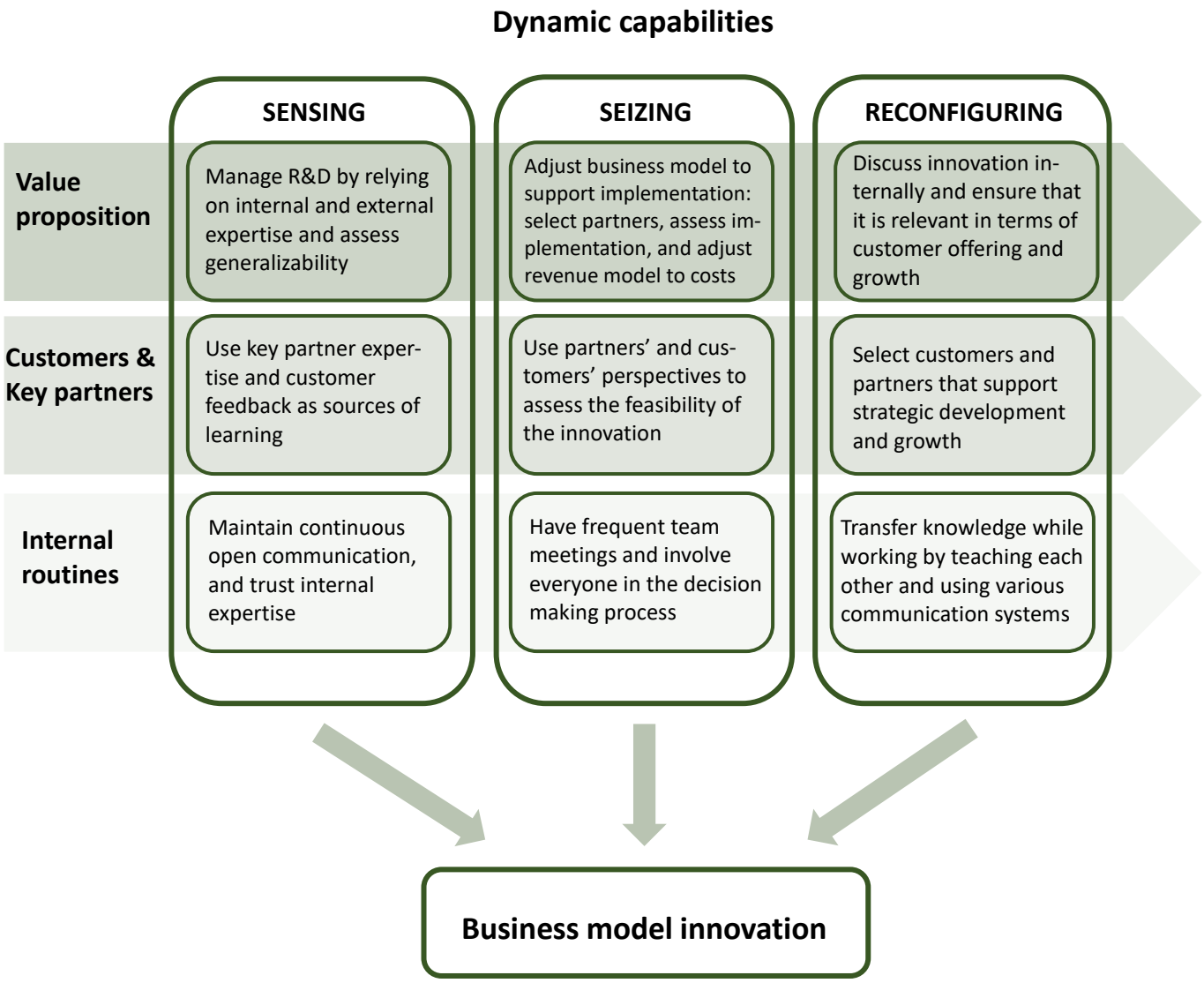


**Figure 16. Dynamic capability practices that enable business model development in Finnish start-up companies.**

# 5 Discussion

## 5.1 Theoretical implications

The purpose of this thesis was to study what kinds of dynamic capability practices enable business model innovation in Finnish start-up companies. Following the brief discussion of start-up company characteristics, the thesis started off by introducing the topic of dynamic capabilities through a literature review. The characteristics of dynamic capabilities were discussed and it was concluded that the research lacks consensus. Dynamic capabilities were further examined through their antecedents, processes and outcomes. Teece's (2007) framework of microfoundations was presented to increase understanding of the dynamic capability processes. This model indicates that dynamic capabilities can be categorized into three microfoundations; sensing, sizing, and reconfiguring, depending on the function of a process. Additional research was presented as support to this approach. As the concept of dynamic capabilities is quite vaguely described in literature. It can be concluded that as literature is so scattered, there are no universal dynamic capability practices that would be a fit for all companies.

One of the characteristics of a start-up company is aiming to achieve scalability and fast growth (Blank, 2007; 2013; El Hanchi & Kerzazi, 2020). Therefore, the concept of business model innovation was also discussed in the literature review. Research reveals that business model innovation has many different forms depending on the circumstances (Geissdoerfer et al., 2018). It is also noted in previous research that although business model innovation is similarly profitable as product or service innovation, it is relatively uncommon amongst early phase start-ups as they seem to rely more on trial and error (Chesbrough, 2007; Schramm, 2018). One of the research objectives for this thesis was to form a connection between business model innovation and dynamic capability literature. The reason behind this is that both research areas examine change and managing changes. Thus, these topics were selected as lenses through which the practices of start-ups would be examined from. A model (Figure 10) was presented as a result of the synthesis of business model innovation and dynamic capabilities. This model acted as the

foundation for the empirical study and was a useful tool when conducting the within-case and cross-case analyses.

The empirical study revealed various similarities in the cases. The key common dynamic capability practices of the case companies are summarized in Figure 15. The main concepts of sensing capability practices were related to learning and relying on key partner's expertise. This was especially emphasized in managing R&D and technology selection, and overall when it came to determine whether to move forward with an idea or not. Another key finding was that opportunities are commonly sensed through gaining customer feedback or other customer engagements. Naturally, active monitoring of the news was found to be crucial as well, however, as a key finding, it could be said that learning and the initial steps of innovating are collaborative processes in start-up companies.

Seizing capability practices were also highly related to key partners' expertise. It could be summarized that in the sensing phase, key partners were used for determining the feasibility of a project. Meanwhile, in the seizing phase, partners act as guides in the execution and implementation processes. Inclusive decision-making and a disruptive market approach were common to all four case companies. It was also a frequently appearing approach to put the prospect of growth and additional revenues first and rather modify the business model and strategy accordingly. These practices related to organizational structures and incentives for implementing opportunities are somewhat similar as proposed by Teece (2007). For example, customer offering and business models were found to be clarified using key partner expertise and customer feedback. Similarly, decision making mechanisms were established and commitment was increased by practicing inclusivity. However, a major differentiating factor from Teece's (2007) model is that the seizing capability processes in start-ups were more related to networking, both internal and external.

Typically, resource re-allocation was regarded as an everyday activity. As resources were reported to be scarce in the case companies, resource re-allocation did not receive as much emphasis. More emphasis was put on monetary resources, such as acquiring funding or finding more lucrative revenue streams. Thus, it can be concluded that monetary aspects dominated the case companies reconfiguring capability practices as well. It can be noted that start-up reconfiguring capabilities diverge the most from the three micro-foundation categories by Teece (2007). Open innovation culture and constant knowledge transfer were highlighted as important, however, not in the similar long-term sense as proposed by Teece (2007). Similar findings regarding the short-term views of the case companies are demonstrated through, for example, the common lack of systematic resource allocation processes. However, this can be partially explained by previous studies where it is proposed that start-ups rely more on trial and error that strategies (e.g., Schramm, 2018). In conclusion, strategy or the lack of strategy determines practices related to reconfiguring capabilities.

When observing commonalities between the cases, the role of internal and external collaboration arises. In all three phases, the case companies emphasized the importance of their team(s) key partners. As a major concluding result from the findings, it can be clearly noted that start-up companies are highly focused on their customer offering, i.e. their value proposition. Therefore, innovation as a concept is understood somewhat solely from this viewpoint. The results indicate that due to their entrepreneurial approach and focus on heavy customer offering, start-up business model innovation is more or less a result of product or service innovation. In other words, as the value proposition is innovated, the rest of the business model is changed to correspond with that innovation. The value proposition is undoubtedly a central and crucial construct in a business model, however, there could be room for innovation in the other building blocks as well. All in all, although disruptive thinking was common in all case companies, their outlook on business models was rather limited which is somewhat contrasting. This finding is, however, in line with the findings of previous studies (see e.g., (Chesbrough,

2007; Schramm, 2018) where business model innovation in general was found to be limited in start-up companies. Thus, this thesis contributes to existing literature by drawing attention to business model innovation in start-ups and pointing out key practices related to it.

To conclude, this study combines the literature on dynamic capabilities and business model innovation. Fundamentally, both research areas examine change and its management which is why they are complementary to study together, especially in a start-up setting where change is constant. In addition to expanding the literature on dynamic capabilities and business model innovation, the study dives deeper by detecting underlying concrete practices and actions taken by real-world case companies instead of solely describing characteristics of processes. Descriptive research is common both in dynamic capability and business model innovation literature which is why the explorative research approach of this thesis is a valuable addition to existing literature. This study also demonstrates that although dynamic capabilities and business model innovation are topics related to reactions to change, not all practices related to them are solely reactive. The amount and variety of the cases further validate the theoretical contribution of this study as they increase generalizability.

The main theoretical contribution of this thesis is the empirical model to examine key dynamic capability practices in start-ups that enable business model innovation. Using aspects from the original Business Model Canvas (Osterwalder & Pigneur, 2010), new categories are formed and combined with the theory of dynamic capability microfoundations by Teece (2007). During the study, it was revealed that neither of the original frameworks was directly applicable to start-ups since they are developed more for larger companies and their processes. For example, there was no need to examine practices related to achieving decentralization in a start-up setting. Therefore, the framework developed in this thesis is customized for start-ups by leaving some categories out or combining them. The empirical model can be further developed or used to detect critical

business model enabling dynamic capability practices from any type of company, regardless of its industry. In other words, this thesis provides a comprehensive empirical model that is ready to be applied to further research.

## 5.2 Managerial implications

There is research on the processes of learning capabilities and microfoundations of dynamic capabilities, however, this study provides an even more specified practice approach on them. Moreover, this thesis digs deeper into the key practices start-up companies do in their everyday operations that support business model innovation. This also increases understanding on how start-up companies react to both internal and external change.

This thesis brings light to the question of how start-ups sense opportunities and what happens after an opportunity is discovered. These are vital aspects to consider by start-up companies as well, since it can aid in pinpointing certain activities and practices that enable or possibly constrain business model innovation and change in general. By examining what is done and why, start-ups can avoid becoming path dependent and rather start to apply more strategic thinking and decision making processes.

The lack of strategy was emphasized in the findings. Although, start-up business is often a result of successful trial and error processes, chasing the next big deal or new sources of revenue will not necessarily result in the best possible long-term outcome. Strategic foresight can also help start-ups with their resource allocation. Thus, a major managerial implication of this thesis is to rattle start-ups to think about their strategy and adjust their decision making to it rather than short-term goals.

The findings also imply that managers should focus on networking as it is found to be the main source of finding key partners. Establishing relationships with partners serve as a source of expertise in the longer term as well. Another focus point is implied to be

team dynamics and communication. Open discussion and inclusive decision making enhance innovation culture. Thus, these themes rise as key aspects start-ups should consider in their everyday activities.

## 5.3 Suggestions for future research

As constant change seems to dominate the current business environment, there remain lots of research opportunities in the field of dynamic capabilities and business model innovation within the concept of start-up companies. This thesis covered the whole range of practices related to sensing, seizing, and reconfiguring but it could be perhaps fruitful to examine each process more in depth. Moreover, future studies could focus on some of the key themes that emerged in the findings. A closer examination could be conducted using, for example, a single case study method.

The role of networks, including key partners and customers could be further studied as these practices were highlighted as an important means that enhances business innovation in start-ups. Future studies could also deep dive into the more strategic perspective of start-ups and examine the seemingly popular disruptive market approach of these companies. The model presented in the study can be used for similar kinds of studies. Furthermore, this research could be expanded and applied to different international markets or a specific industry.

## 5.4 Limitations

As the conceptualizations of dynamic capabilities are broad, it was decided in this thesis to focus the study mostly on the concept of microfoundations by Teece (2007). This provides a great lens for the empirical study, however, it limits the study to only one concept of dynamic capabilities. Regardless of basing the study on microfoundations, this thesis provides a general view of dynamic capability practices that enable business model innovation in start-up companies. Therefore, more detailed research on the specific practices is needed.

Moreover, the people interviewed in this study are either founding members or have been otherwise involved with the company since the beginning. While this can be a positive aspect in regards of more holistic answers in the interview, it can only provide a certain point of view. More recent team members might have different opinions of company operations. Similarly, the research method enables the study to only examine dynamic capability practices in a certain point of time when the interview is conducted. In other words, this thesis does not necessarily reflect the so called best dynamic capability practices for start-up companies but rather a glimpse to current common practices.

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# Appendices

## Appendix 1. Interview questionnaire

Case company name and age:

**Basic information**

1. What does your company do?
2. What is your role in the company?
3. What was the company's initial vision, strategy and business model?
4. How have operations changed since the beginning? Please provide an example.

**Sensing capabilities**

5. How does your company manage R&D and the selection of new technologies?

    - Describe your company's process in finding new solutions and/ or developing existing solutions.
    - How do you select new viable technologies for innovations?

6. How does your company search for potential key partners? (suppliers, complementors, etc.)

    - How have you learned from these partners and how have you benefitted from their innovations? Please provide an example.
    - Do you think that other parties play a relevant role in the learning process of your company? Please estimate how large percentage of the new innovation ideas come from key partners?

7. How do you monitor and exploit external innovations and developments in science and technology?

    - How does your company keep up with trends and shifts in the environment?

8. What are your processes to identify target market segments, changing customer needs and customer innovation?

   - What does your company do to ensure deep understanding of customer segments and customer needs?
   - Do you co-innovate or co-create with your customers? Please estimate how large percentage of the new innovation ideas come from customers?

**Seizing Capabilities**

9. When potential for innovation is recognized how do you proceed to pursue it?

   - How do you adjust your customer offerings and your business model?

     - How do you select the technology and product architecture,
     - Revenue architecture,
     - Target customers?

   - How is this process managed?

10. How do you make decisions in your company regarding innovations?

    - Do you have established decision-making protocols?
    - How do you avoid decision errors and biases?

11. How do you prevent competitors from imitating your innovation? Please provide an example.

    - How do you manage other competitive risks?
    - How does your company manage its assets (tangible and intangible)?

12. How do you ensure that all employees are committed to pursuing the interests of the company?

- How do you build loyalty and commitment within the company to ensure the integration of the new innovation?

**Reconfiguring Capabilities**

13. Is decision making decentralized in your company?

- Do employees have strict roles or are they less limited? Do employees have autonomy or are they closely monitored?
- How do you embrace open innovation?

14. Describe your organizational structure.

- How do you aim to avoid that your company does not get set in its ways of operating?
- How do you facilitate continuous asset realignment?

15. How do you ensure that innovation is in line with your strategy?

- Describe how your activities, customer segments, relationships and/ or resources have been realigned when an innovation was decided to be implemented.

16. Describe knowledge management and knowledge transfer in your company.